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ABSTRACT

The seven papers and four discussions in this publication present several perspectives on educational innovation and its adoption in the schools. Topics discussed include political and structural protection of innovations, change introduced from outside the school, ESEA Title III influences on change processes, local school district change strategy, and research. Generally, the authors agree that change is more effective when it is implemented from within the school, that research and development people should disseminate findings more effectively, and that too few data-based studies about effecting change reach school people. (DW)

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# WHAT DO RESEARCH FINDINGS SAY ABOUT GETTING INNOVATIONS INTO SCHOOLS: A SYMPOSIUM

Edited by:
Sanford Temkin
Mary V. Brown

Publication No. OP-305

January, 1974

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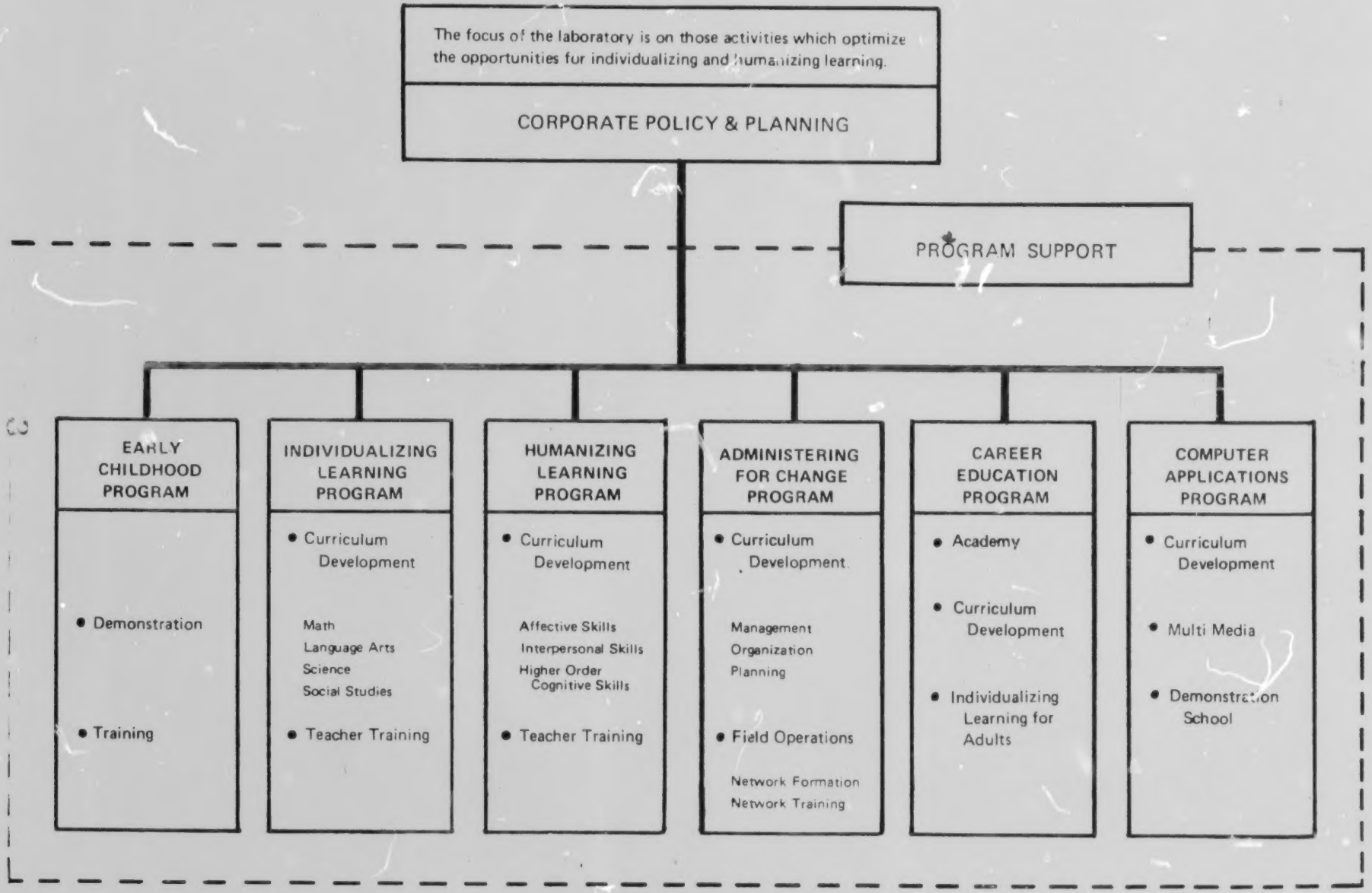
RESEARCH FOR BETTER SCHOOLS, Inc.
1700 MARKET STREET
PHILADELPHIA, PENNSYLVANIA 19103

# OPERATING NETWORK OF RESEARCH FOR BETTER SCHOOLS, INC.



Research for Better Schools, Inc. (RBS) is a non-profit educational laboratory chiefly supported by contracts from the National Institute of Education. Since its beginnings in 1966, RBS has been concerned with the practical dimensions of getting innovations into schools. RBS' initial activities in the dissemination/diffusion aspects of school district change were the field testing, field development and national diffusion of Individually Prescribed Instruction (IPI).

The Administering for Change Program (ACP) of RBS has worked with a Network of School Districts to learn about ways to engineer practical solutions for school districts that bring externally produced innovations to their schools. ACP, through its field staff, has long been involved with how practitioners introduce, implement and, ultimately, substitute proven classroom innovations for existing practices on a district-wide basis. School district staff have provided a rich flow of practical content for incorporation into a set of training materials for administrators.

On October 8-9, 1973, ACP convened a symposium, "What Does Research Say About Getting Innovations Into Schools?" ACP's purpose was to provide a forum to which a diverse group of opinions and experiences could be brought and shared.

Twelve individuals participated in a paper presentation and discussion format during the first day. Staff from RBS and the twelve participants engaged in small group discussions during the second day.

All participants were selected for their special perspectives on the subject of innovation. The paper presenters:

J. Victor Baldridge, Stanford Center for R & D in Teaching, Stanford University, was invited because of his recent study on the impact of educational R & D centers and laboratories.

David P. Crandall, Executive Director, Network of Innovative Schools, was invited because of his current work with a group of innovative schools in Massachusetts.

Ronald G. Havelock, Center for Research on Utilization of Scientific Knowledge, University of Michigan, was invited because of his continuing interest in knowledge utilization and linkages between knowledge producers and users.

Richard I. Miller, Associate Director, Illinois Board of Higher Education, was invited because of his work as Director of the first two national evaluations of PACE (Projects to Advance Creativity in Education) which - in actuality - was the evaluation of Title III, ESEA.

Wendell Pierce, Executive Director, Educational Commission of the States, was invited because of his broad experience with the role of states in change as well as his practical insights into the politics of education.

Bernard C. Watson, Chairman, Department of Urban Education, Temple University, was invited because of his experience as Deputy Superintendent as well as his continued interest in urban education.

Sanford Temkin, Director, ACP, was invited because of his work with school administrators and change at RBS.

The discussants:

Margaret Fleming, Director of Research, Cleveland Public Schools, was invited because of her research background with a large public school system.

Hendrik Gideonse, Dean, College of Education, University of Cincinnati, was invited because of his past experiences as chief planner with the United States Office of Education as well as his present role in higher education.

James Kelly, Dean, College of Education, University of Pittsburgh, was invited because of his work in teacher training and change with the American Association of Colleges of Teacher Education as well as his present role in higher education.

Shirley McCune, Manager, Human Relations Section, Teachers' Rights Division, NEA, was invited because of her continued interest in change and her recent work with teachers about how they see roles in change.

Matthew Miles, State University of New York at Albany, was invited because of his extensive writing and interest in the human dimension of educational change.

Such a diversity of individual backgrounds and perspectives produced discussions that embraced broad considerations of politics, funding, institutional configurations, R & D delivery strategies, school district capabilities and competencies.

To generalize the proceedings would be unfair to the many different perspectives offered. While consensus was not reached on all issues, there were, nonetheless, some points for which general agreement seemed to pertain. Among these were:

-- R&D delivery strategies aimed at bringing research findings, knowledge and products to the schools have less potential for change than those strategies that emphasize strengthening the capabilities of school districts to actively be responsible for their own improvement.

-- R&D agencies need lessons in how to make their clients more aware of what is potentially available to them. It appeared to some that R&D agencies as a group may not have been politically sophisticated enough to develop a constituency for themselves.

-- Few, if any, research findings about how innovations get into schools are available. Most of the change-related knowledge consists of models, assumptions, and hypotheses. The few data-based studies have been so loosely conceptualized that their results are open to many alternative explanations and, as such, offer little help to practitioners or those who want to help practitioners.

We invite you to read the papers and discussant remarks which are presented in the body of this monograph. It should be acknowledged that most papers were revised by the authors after the symposium and further that the written discussant remarks contained here were also prepared after the symposium.

S.T.
M.V.B.

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# POLITICAL AND STRUCTURAL PROTECTION OF EDUCATIONAL INNOVATIONS

J. Victor Baldridge
Assistant Professor of Education and Sociology
Stanford University

# POLITICAL AND STRUCTURAL PROTECTION OF EDUCATIONAL INNOVATIONS*

Over the past several decades there has been an enormous amount of research on social innovations and their adoption by organizations. Much of this research has been done in the field of education, and millions of dollars have been poured into developing new curricula, new organizational structures, and new educational technologies. The federal government has spent huge sums of money on educational innovation, especially as reflected in the growth of a nationwide system of educational research and development centers and laboratories. In the early sixties the excitement and fervor about innovation in the educational world spurred hopes for revolutionizing the educational process. Now, in the middle seventies, a deep disillusionment has set in about these educational processes, the chance for reform, and the hope that serious transformation will actually occur.

We are presently confronted with the problem that neither the time, energy, nor money expended on innovative educational practices have produced the desired impact. Most large-scale evaluations of educational social action programs, such as Head Start and Follow-Through, have shown that the optimism about their effectiveness simply has never been realized. Time and time again we find the curricular products of the research network are developed and then left sitting on shelves, unused because the target educational organizations continued using old practices.

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*This paper was prepared with the assistance of Jeanette Wheeler, Project Writer.

Analysts and scholars studying the problem of educational change have been baffled by the difficulty of translating new educational designs into usable organizational forms which can be implemented in the field. Although hundreds of research articles have been added to the professional literature, there still seems to be a paucity of understanding about the basic diffusion and implementation process. There is a shortage of usable information for the practical administrator who wants to incorporate innovations into his organization, and who needs to build a flexible, adaptive system that can search for creative solutions to its problems.

The problem does not seem to be a lack of good research. On the contrary, for many years educationists, anthropologists, sociologists, organizational theorists, and social psychologists have been interested in the processes by which technological and social inventions are diffused. As early as 1962 Rogers reviewed over 500 articles in the area of innovation diffusion, by no means an exhaustive list even at that time. Since then the diffusion of innovation has continued to interest social scientists, and the flow of literature on the topic has grown at a rapid pace. The innovations studied cover a broad spectrum of social life: smallpox inoculations (Miller 1957); educational innovations (Knight 1967, Miles 1964; Keeley 1968; Guba 1968; Carlson 1967, Ross 1958, and Mort 1938, 1947); agricultural inventions (Lionberger 1960, Rogers 1962); child-rearing practices among American mothers (Brim 1954, Maccoby et al. 1959); medical inventions (Caplow 1952, Coleman 1966); the introduction of modern machinery into underdeveloped nations (Goldsen and Ralis 1957).

Unquestionably, there is growing public concern about the diffusion of educational and other social innovations--the factors promoting that diffusion, the barriers holding it back, the patterns of communication surrounding it, and the evaluation of whether social inventions are accomplishing their purposes. Clearly, the study of innovation diffusion has social scientific interest--especially when that interest is linked to educational and social policy issues--and has attracted a great deal of systematic, empirical research.

Why, then, are our conceptualizations about the change and innovation process still so weak? Why do we still fail frequently in applying educational and social action programs? In many ways, I believe, the problem can be traced to the widespread adoption of unsuitable paradigms, inappropriate focuses of research, and styles of analysis that have often concentrated on the wrong sets of problems.

The objective of this paper is to help refocus attention on aspects of the innovation and diffusion process that may have higher practical payoff. First, several basic trends in the literature on diffusion and innovation will be explored, and I will try to show how these trends have been either incomplete, misleading, or not helpful for the practical administrator. Second, I wish to suggest some reformulations of the conceptual frameworks in innovation and to show how these conceptualizations might be more useful. In the process I will report on empirical findings of research on educational change conducted at Stanford University, and, in particular, how these findings are directly tied to the conceptual reformulations. Finally, practical implications of this research will be offered so that, hopefully, the findings may contribute to field administrative practices.

## I. MAJOR TRENDS IN RESEARCH ON INNOVATION

Four major themes seem to permeate the bulk of the literature, drawing our concern away from other important issues vital to the innovation process.

### A. Research has generally focused on the early stages of the development and diffusion cycle.

Most commentators on diffusion and innovation use a simple model with a number of stages. Rogers (1962), for example, outlines the stages in the research and development cycle as: (1) awareness, (2) interest (3) trial, (4) evaluation, (5) adoption, and (6) discontinuance. (Similar stages are identified by a number of other authors: Hage and Aiken 1970, and Katz, Levin and Hamilton 1963). Clark and Guba (1965) describe the stages of the research and development effort in similar terms: (1) research, (2) development, (3) diffusion, (4) trial, and (5) adoption. If we accept some version of these stages, then it seems fair to say that the literature on diffusion and innovation has usually focused on the early stages in the cycle--the development, diffusion, and trial periods.

With the immense volume of research on the early phases of the innovation process, we now should refocus serious attention to the implementation phases and to structural support for innovations. We already have a number of theories about diffusion, initial trial, and adoption, and they are useful for our understanding of how innovations are developed and disseminated. However, unless those innovations are structurally, financially, and politically supported

within the organization they are likely to die on the vine--as those who have tried to change organizations will sadly testify. In short, we need more information and research on a variety of problems in the actual implementation phases: (1) What kinds of reward structures are necessary to support the innovation? (2) What kinds of political coalitions are needed to give the innovation viability? (3) What kinds of authority structure still support the innovation rather than undermine it? (4) How should the new program be financed? (5) How can the innovation be evaluated as to its effectiveness? It is obvious that the very asking of these questions raises a series of problems that have received little attention in the literature.

To suggest that research on the latter phases is scarce, however, does not mean that it is nonexistent. Many R and D centers and laboratories have recognized that their innovations quickly die in the field, and have set up special organizational analysis sections. Research for Better Schools, The Center for Advanced Study in Educational Administration, and the Stanford R and D Center on Teaching all have organizational studies under way. The research reported in the latter part of this paper, for example, depends on the Stanford efforts. In addition, a number of sociologists are working on the problem. Neil Gross and his associates studied a major elementary school innovation that failed for lack of administrative and organizational support (1971). Baldridge (1971) analyzed a series of changes at New York University and followed the changes through the complex five-year period of implementation.

Another developing area is program evaluation--a conceptual tool that will undoubtedly have much to offer in analyzing innovation and change. (For example, see Weiss 1972; Stufflebeam et al. 1970; Rossi and Williams 1971). Although the research traditions have not yet converged, there are hopeful signs that more attention will be given to the latter phases of the innovation cycle.

B. Research has focused on a narrow range of innovations.

Another consistent theme is that the innovation literature has usually focused on limited kinds of technological innovations. For example, in the widely used agricultural diffusion studies, the innovation being studied had several characteristics. First, it was highly technical and its effectiveness had been well proved before it was disseminated (e.g. new types of seeds). Second, there was a relatively short payoff time in which the person adopting the innovation could tell whether it was working and could judge its continued use (one season's crops were generally sufficient to convince a farmer to use a new seed). Third, evaluation of the innovation's technical efficiency was both within the scope of the user and readily apparent (the farmer himself could decide the effectiveness of the new grain and easily interpret the results). Finally, the decision-maker adopting the innovation was a single individual or group of individuals, not a complex organization (the individual farmer could choose to use or not to use seeds without getting a complicated organizational decision).

It is critical to realize that most social and educational experiments of the last decade have not been of such a specific technical nature that they can be easily understood and readily articulated into the framework of the ongoing educational enterprise. First, technology in education is much more complicated, for it depends heavily on professional judgment, creative insight, and practical experience. The technology is of a professional rather than a narrowly technical nature. Second, the results from educational technology rarely, if ever, have a short turnaround time in which the innovation's effectiveness can be evaluated. Instead it takes months, years, and even decades to determine whether the educational process has been strengthened by the innovation.

Third, educational innovations are extremely difficult to evaluate. The decisions of the farmer or the doctor are simpler to make than those of the teacher. If the grain grows or if the medicine cures the ailment, the farmer and the doctor know that their innovations are working, but how does a teacher know whether students have learned social studies better under the new system? Finally, the adopter of the innovation in education is almost always a complex organization--a school district, college or university, department within a school, or some educational committee. The complexity of the decision process and the multiple chains of command necessary to implement a decision makes the diffusion of educational innovation an entirely different enterprise from the simple one-man adoption of a new seed, drug, or piece of equipment.

FIGURE ONE

COMPARISON OF DIFFERENT TYPES OF INNOVATIONS

| Types of Innovations Usually Examined in the Literature on Innovation and Diffusion | Most Educational Innovations and Social Action Programs |
|---|---|
| 1. Clear Technology - the processes and their outcomes are readily understood and applied. | 1. Unclear Technology - processes and their outcomes are not readily understood and applied. |
| 2. Short-range Payoff - results can be seen in a relatively short time. | 2. Long-range Payoff - results will be seen after a long time period has elapsed. |
| 3. Individual Adopter - individual decides to accept or reject the innovation. | 3. Organizational Adoption - complex decision on innovation. |
| 4. Clear Evaluations - it is possible to get clear reading on whether the innovation is effective. | 4. Unclear Evaluations - not possible to get clear reading on effectiveness of innovations. |
| Examples: | Examples: |
| - Drugs | - Team teaching |
| - Agricultural innovation | - Manpower training programs |
| - Machinery and technologies | - Teacher education programs |

We must develop different analytic tools to understand such a complex process. In order to examine the adoption of seeds by a farmer we do not need to understand political coalitions and organizational decision-making. It would be suicide, however, not to understand those dynamics in studying the adoption of a new social studies curriculum in a public school. If we are investigating an innovation such as team-teaching or school integration, the reward structure, the authority lines, and the decision-making processes of large educational organizations are critical to the analysis. Research on this type of complex situation does exist in the studies of community adoptions of fluoridation during the 1950's (Crain 1962), the spread of the city manager form of government, and the adoption of innovations in complex school districts (Mort 1947, Burnham 1972, and Corwin 1972). More research is needed, however, along with a critical look at the theoretical basis for that research. An adequate theory of diffusion and innovation must consciously examine the type of innovation and must be directly relevant to the specific kind.

C. The Individualistic Bias in Innovation Research

Most research on innovation diffusion has been individualistic, focusing not only on a limited range of technical inventions, but also concentrating narrowly on the factors causing an individual user to adopt or reject that invention. Usually the dependent variable concerns individual adopters: will mothers adopt birth-control pills, will natives substitute a steel ax for their traditional stone one?

Sometimes the rate of adoption among a group of people is the dependent variable: how fast will individuals with X characteristic adopt the innovation when compared with individuals with Y characteristic? Not surprisingly, the independent factors that are supposed to produce the behavior are typically individualistic. For example, are the adopters younger or older, traditional or modern, rich or poor, opinion leaders or followers, of high social status or low, at the center of a communications network or isolated? (e.g. see Rogers and Shoemaker 1971 and Rogers' review, 1962.)

In few cases are complex organizations and their problems treated in the diffusion literature, despite the fact that most major social policy inventions being diffused today are used by complex organizations rather than by individuals. Educational inventions, community action projects, new technologies in industry, and new health delivery systems are examples of social inventions that are primarily adopted by complex organizations, not by individuals. Unfortunately, the literature on innovation provides little help in this area. In fact, Rogers' monumental study (1962) of innovation summarized the research conclusions in 52 major propositions--not one referred to a complex organization as the innovation adopter or to organizational features as independent variables affecting the process.

The focus on the individual as the prime analytical unit in diffusion studies is no surprise, for even organization theorists have commonly used individualistic factors in discussing organizational change. The "human relations" school of organization theory

has virtually preempted the study of organizational change. Most books with titles dealing with organizational change--for example, Warren Bennis' Changing Organizations (1966)--actually are more concerned with changing individuals within organizations. The two organizational change articles (Shepard and Leavitt) in James March's Handbook of Organizations (1965) in reality examine individualistic and social psychological questions, not macro-organizational change. In short, the focus upon individual characteristics and individual adopters in the research on innovation diffusion is a logical complement to the individualistic focus in other areas of organizational change.

As we shift our focus away from single, mechanical, technological inventions to large-scale social innovations, it is important to have a fresh perspective on the problem of innovation diffusion. In essence, we are arguing (1) that organizations are now the major adopters of social inventions, and (2) that organizational factors and organizational dynamics are the major independent variables which will influence the amount, the rate, and the permanence of innovations. This is a drastic reshaping of the intellectual tradition surrounding the diffusion of innovation.

Our belief that a shift away fr[illegible] individualistic interpretations will be helpful is buttressed by research findings, both our own and those of other organization theorists. For example, after reviewing many studies of organization change that had focused on individual-level variables, Katz and Kahn make this discouraging statement:

> In short, to approach institutional change solely in individual terms involves an impressive and discouraging series of assumptions--assumptions which are too often left implicit. They include, at the very least: the assumption that the individual can be provided with new insight and knowledge; that these will produce some significant alteration in his motivational pattern; that these insights and motivations will be retained even when the individual leaves the protected situation in which they were learned and returns to his accustomed role in the organization; that he will be able to adapt his new knowledge to that real-life situation; that he will be able to persuade his coworkers to accept the changes in his behavior which he now desires; and that he will also be able to persuade them to make complementary changes in their own expectations and behavior.
>
> The weaknesses in this chain become apparent as soon as its many links are enumerated. The initial diagnosis may be wrong; that is, the inappropriate behavior may not result from lack of individual insight or any other psychological shortcoming. Even if the initial diagnosis is correct, however, the individual approach to organizational change characteristically disregards the long and difficult linkage just described. This disregard we have called the psychological fallacy.
>
> (Katz and Kahn 1966, 391-2)

Moreover, Hage and Aiken report their research shows:

> The results of our study clearly suggest that structural properties were much more highly associated with the rate of program change than attitudes toward change. This implies that the structure of an organization may be more crucial for the successful implementation of change than the particular blend of personality types in an organization.
>
> (Hage and Aiken 1970, 122-3)

In our Bay Area study we found few individual characteristics that correlated highly with a person's leadership in change efforts. Specifically, variables such as sex, age, social origin, and years in the school or district had no relation to change efforts when organizational position (e.g. head of department) was controlled.

In fact, all the individual characteristics that related to change were obviously tied to organizational structure -- rank, position, administrative responsibilities. The evidence raises serious doubt about the influence of individual characteristics when the innovation is being adopted by an organization.

In light of these problems the research efforts are gradually shifting, and many researchers have already begun focusing more upon organizational characteristics. In the study of industrial innovation, for example, research has been done on organizational decision-making as it affects the adoption of particular new processes or inventions (see Knight 1967). Moreover, some of the research on educational innovation has stressed the importance of organizational processes in adopting innovations (see Ross 1958 for a summary of over 150 articles on educational innovation, a few of which include organizational variables). Paul Mort's research at Columbia Teachers College largely focused upon school systems as the innovation adopter and upon characteristics of the district and its environment as the independent variables. Mort's research concluded that the financial state of the district was a major factor in promoting adoption of innovations. Corwin (1972) stresses organizational factors that influenced teacher training programs. In short, a few researchers have turned to organizational features as the causes of change and innovation, but much needs to be done to continue developing momentum in that direction.

D. Research Using the New Emphases: Preview of Empirical Results

Although the literature on innovation and change offers a wide variety of perspectives and a rich heritage of research, it is important at this point in the intellectual development of the field to shift attention in a number of critical ways. First, the latter stages of the innovation and implementation cycle should be carefully examined as to structure, political processes, and implementation strategies. Second, more attention must be paid to different types of technologies and innovations that are complex, have long-range payoff, are unclear in their evaluations, and are adopted by organizations rather than by individuals. Finally, more consideration must be given to the role of organizational structure and processes in sustaining and undergirding innovations.

The remainder of this paper will examine a series of six research projects sponsored by the Stanford Center for R and D in Teaching. These studies were conceptualized to focus on the three major themes outlined above. Although it is beyond the scope of this paper to provide the details of each study, Figure 2 gives the names of the studies, brief methodological descriptions, some key findings, and references to the original documents.

To preview our findings, two interlocking sets of results emerged from those six studies:

STANFORD RESEARCH PROJECTS ON ORGANIZATIONAL CHANGE

FIGURE 2

| Name | Sample | Data Collection Methods | Basic Findings | Literature References for Results |
|---|---|---|---|---|
| New York University Study | Intensive case study of change in one institution | 1. Document analysis | 1. Environmental factors (loss of students, financial difficulties) were critical impetuses for change. | Baldridge (1971) (1972) |
| | | 2. Questionnaire to administrators and faculty | 2. Strong administrative leadership was a central factor in creating change. | |
| | | 3. Participant observation | 3. Political interaction among organizational interest groups both promoted and hindered change. | |
| | | 4. Interviews of key people in change | | |
| Study of Illinois Public School Districts | Survey of 184 elementary and secondary school districts | 1. Questionnaire to superintendents | 1. Larger school districts adopted more innovations. | Baldridge & Burnham (1971) Burnham (1972) |
| | | 2. Document analysis of:<br>-State Educ. Dept. (ADA 1968-69)<br>-Census Bureau (population density; % urban; % non-white)<br>-County and City Data Book | 2. Complex school districts adopted more innovations.<br>3. Districts in changing, complex environments adopted more innovations. | |

STANFORD RESEARCH PROJECTS ON ORGANIZATIONAL CHANGE (CONTINUED)

| Name | Sample | Data Collection Methods | Basic Findings | Literature References for Results |
|---|---|---|---|---|
| San Francisco Project on Organizational Change (5 studies) | Survey of random sample of dept. heads, teachers, administrators in 20 San Francisco Bay Area High Schools from 7 districts | 1. Interviews with critical change participants | 1. Change participants were more likely to be older, a result of position and thus have more education and influence in district. | Hamrin (1970), Knight (1970), Gorth (1971), Penny (1970), Schmick (1970) |
| | | 2. Questionnaire survey of other teachers and administrators | 2. Teachers perceive themselves as having greater influence & involvement in the process of change implementation than department heads and administrators. | |
| | | | 3. Poorer schools and schools with higher % of non-whites had more outside influence and more change impetus. | |
| Midwestern University Study | Intensive case analysis by consultants of organizational problems, recommendations implemented by university | 1. Evaluations by Dean and his staff | 1. Heavy environmental demands were taxing institutions ability to respond to needs. | Baldridge, Atkin, Howsam (1972) |
| | | 2. Internal task force of faculty, staff and students | 2. More complex structure was needed to deal with environmental demands. | |
| | | 3. Outside consultants in organization and administration | 3. "Matrix" organizational plan developed. | |

STANFORD RESEARCH PROJECTS ON ORGANIZATIONAL CHANGE (CONTINUED)

| Name | Sample | Data Collection Methods | Basic Findings | Literature References for Results |
|---|---|---|---|---|
| Environment for Teaching Program | Longitudinal study measuring relation between innovation and organizational complexity through survey of principals and teachers in 200 elementary schools from 34 S. F. Bay Area Districts | 1. General survey of superintendents and principals (interview and questionnaire)<br>2. Intensive survey using teacher questionnaires and classroom observation | Work still in progress | Cohen, Deal (in progress) |
| Stanford Project on Academic Governance | Comparative survey of 241 colleges, universities and community colleges in U. S. | 1. Document analysis<br>-college and university blue book<br>-college catalogs<br>2. Questionnaires<br>-institutional questionnaire to central administrations<br>-individual questionnaires of faculty members and administrators (response from 9,200) | Work still in progress. | Baldridge, Curtis, Ecker, Riley (in progress) |

1. Structural complexity and size

Educational organizations that are structurally complex and large in size generally have more problem-solving capacity built into their systems, and consequently tend to be more innovative. Moreover, it appears that the introduction of innovations requires serious organizational restructuring if the innovations are to survive.

2. Environmental impact

Much innovation is linked to outside forces, and educational organizations located in changing, complex environments that make multiple demands are more likely to be innovative. In addition, organizations that build viable "linking mechanisms" to their environments, and that generate powerful external constituencies, more often sustain their innovative character.

## II. THE RELATION BETWEEN SIZE, COMPLEXITY, AND INNOVATION

Our first cluster of empirical results suggests that innovative organizational behavior is enhanced by large size and structural complexity. In order to accomplish their tasks, complex organizations are subdivided into specialized units, administrative positions, and organizational subsections. Generally these subsections are formed around subcomponents of the organization's task, with each specialized unit manned by administrators designated to handle specific jobs. This splintering process of the organization allows for greater efficiency, if all specialized subcomponents are effectively coordinated to achieve the overall task.

Many studies have shown that increases in size are directly related to increases in complexity as measured by hierarchical levels, the number of administrative positions, and the ratio of administrators to other employees (Blau 1970). The arguement is that increasing size leads to a multiplying set of task problems; the

organization handles these problems by subdividing into specialized units to deal with the tasks. The link between size and differentiation is important for the study of innovation. If differentiation has a major impact on innovation, and if size is a major determinant of differentiation, then size is likely to have a strong indirect effect on innovation.

A. Size and Complexity Promote Innovation

In most situations it is reasonable to expect that increased size and complexity will lead to increased innovation. Increased structural complexity (partly caused by large size) creates many specialists, all perceiving different problems from their particular frames of reference and from their own subunit's viewpoint. Because they see varying problems and because they handle specialized subtasks, they initiate search procedures for more efficient techniques to accomplish their goals (see discussion by March and Simon 1958). This diversity, however, tends to produce high levels of conflict, as separate but highly interdependent components interact. As the multiplicity of unique problems and solutions are generated, conflicts over resources and goals must be resolved through integrating mechanisms, such as hierarchical decision-making or joint policy-making through coordinating committees. Both differentiation, in terms of structural units, and integration, in terms of coordinating mechanisms, help promote innovation--the former by creating specialists whose job is to seek new solutions, and the latter by providing mechanisms for overcoming conflict (see Lawrence and Lorsch

1967). Thus, as the number of differentiated subcomponents increases, the quantity of alternatives and solutions also increases in response to perceived unique problems. The diversity of incentive systems and task structures resulting from differentiation is another major reason for increased innovation. In short, increased structural differentiation coupled with high levels of integrative mechanisms is likely to result in high innovation rates.

Do the empirical results support the theoretical argument? The answer is a strong "Yes," for in the two completed studies supported by Stanford, increased size and complexity were positively related to innovation. In the Illinois study, for example, superintendents were asked in a questionnaire to identify, from a list of previously investigated major innovations, the ones their district had adopted and continued to use for at least two years. Some of the results are in Figure 3. When districts are separated into high adopters and low adopters, it is obvious that in every case the high adopters are more complex structurally than the low adopters. There are nearly 50 percent more administrative positions; there are twice as many full-time administrators; there are about 25 percent more conflict-preventing policy systems, and a significantly greater number of conflict-resolving committees. The correlations (not shown) between innovation and various measures of complexity varied from $r = .24$ up to $r = .45$.

FIGURE 3
List of Variables
Indicators, Definitions, and Sources
in the Illinois Study

| VARIABLE NAME | INDICATORS | DEFINITION | SOURCE | When districts are split into HIGH and LOW Innovators, what is their average score on each variable? HIGH ADOPTERS More than 38% / LOW ADOPTERS 38% or Less |
|---|---|---|---|---|
| Structural Differentiation | Organizational Components | The number of programs & positions which were formally organized in each district. | Superintendent's Questionnaire | Avg. No. of Admin. Positions: 12.3 / 8.2 |
| | Specialization | The number of fulltime equivalent administrators assigned to the programs reported for Organizational Components. | " | Average FTE Administrators: 25,095 / 13,888 |
| | Conflict Prevention Devices | The sum total of district's use of (a) policy defining the jurisdiction & responsibilities for each major dept., (b) rules governing interdepartmental arrangements, (c) job description for administrative positions, or (d) an organizational chart. | " | Policy Systems: 2.9 / 2.1 |
| | Conflict Resolution Mechanisms | Resolution mechanisms are those formal social interaction channels which serve to dissipate or mitigate tension. Measured by number of district-level ad hoc policy committees (weighted 1) & standing policy committees (weighted 2) | " | Policy Committees: 9.2 / 7.7 |
| Size | No. of students | District average daily attendance for 1968-69. | State Education Dept. | District ADA for 1968-69: 5,335 / 2,561 |

FIGURE 3 (CONTINUED)

| VARIABLE NAME | INDICATORS | DEFINITION | SOURCE | HIGH ADOPTERS More than 38% | LOW ADOPTERS 38% or less |
|---|---|---|---|---|---|
| Environmental Variability | Population Density | Density of population per square mile within each county (more density = more variability). | Census Bureau | Density per sq. mile 2,134 | 1,135 |
| | Urbanization | The percentage of the county population classified as urban by U. S. Census Bureau (More urban=more variability) | " | Percentage Urban 73.9 | 58.2 |
| | Percent Non-white | The percentage of non-whites in each county. (more non-whites = more variability) | " | Percentage Non-White 7.8 | 4.8 |
| | Local Taxing Agencies | The number of public taxing agencies within the county in competition with school districts for tax dollars. (More agencies - more variability) | City and County Data Book | 209.4 agencies | 136.4 agencies |
| | Educational Expenditure Ratio | The ratio of total educational expenditures to total direct general expenditures for local government. Inversely related to environmental variability, since a county in which education is the largest public endeavor would have a high educational expenditure ratio but few other activities. (Lower ratio = more variability) | " | 48.4% public funds go for education | 52.8% public funds go for education |

FIGURE 3 (CONTINUED)

| VARIABLE NAME | INDICATORS | DEFINITION | SOURCE | HIGH ADOPTERS More than 38% | LOW ADOPTERS 38% or less |
|---|---|---|---|---|---|
| | Percent Home Ownership | The percentage of owner occupied housing in a county was assumed to be a measure of transiency in the environment. (Less ownership = More variability) | Census Bureau | 61.3% own homes | 65.3% own homes |
| Innovations Adopted | Innovations | Of those innovations possible for a district, what percent had it adopted? | Superintendent's Questionnaire | 38% or more of possible innovations adopted | Less than 38% possible innovations adopted |

Sample: 184 school districts in the State of Illinois



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Turning to the size question, we suggest that size is related to innovation in two ways, directly and through its impact on complexity. The results of the Illinois study strongly support both subhypotheses. Figure 3 shows that innovative districts have an average of 5,335 pupils, while districts with low rates of adoption have 2,561. This is obvious in the correlations as well, where the relationship between size and innovation is $r = .46$ (not shown). The subhypotheses that size influences differentiation is also well supported, with the correlation between size and the various measures of organizational complexity varying between $r = .68$ and $r = .91$.

The Organizational Change Project that examined schools and districts in the San Francisco Bay area reached exactly parallel conclusions: large, structurally complex districts and schools were much more likely to adopt both new curriculum innovations and new organizational designs (open classrooms, team teaching, modular scheduling; Hamrin 1970).

B. Organizational complexity is necessary to sustain innovation.

The results of our study suggest that complexity and size are critical factors in developing innovative practices. In addition, we propose that since organizational complexity is so important in promoting change, it will be just as important in sustaining change. In general, our analysis of hundreds of schools and districts in the various Stanford research projects has led us to conclude that schools, as an organizational subtype, are underorganized. We have no hard data on this issue and, in fact, it is almost impossible to

accumulate hard data on an issue that is basically judgmental. However, in comparison with most complex organizations, schools and school districts have less role differentiation, fewer specialized officials to handle particular problems, a smaller critical mass of problem-solving experts, and fewer support services. If we look only at schools, this is the case when we compare large and small districts--the larger ones have many more backup services and specialized personnel.

In the Environment for Teaching project, which is still underway, a set of hypotheses is being tested concerning the sustained support of innovation. The basic premise is that organizations adopting similar innovations at the same time will sustain those innovations to the extent that a complex organizational system is built to support them.

1. Role Specialization

First, we suggest that more role specialization, the creation of specialized teaching positions and administrative roles, will support innovation. The more school systems develop hierarchical differentiation the more they will be able to handle innovation. That is, the more the systems build in middle-level managers between teachers and district administrators, the more support can be given to teachers to meet specialized roles. Examples of such middle-level roles would include a richer variety of curriculum experts, skilled technology directors (audiovisual, instructional computers), and even special "change agents" whose jobs are to foster and disseminate innovation.

2. Centralized Coordination

Second, innovations are likely to be spread widely in a district with centralized coordination responsible for developing and supporting innovation. In some cases centralized decision-making acts as a creative force promoting the spread of innovation. It may be that decentralization promotes innovation, as many people have argued. However, it may also be true that, once implemented, innovations are then sustained by a centralized management. Many of these hypotheses run counter to the beliefs and myths that surround school innovation. In effect, we are saying that schools need more organization and more administrative support, and that school systems ought to be made more administratively complex if innovation is a critical goal.

3. Evaluation Systems

Finally, we argue that innovations can achieve long-run support and demonstrate their effectiveness only if they are systematically evaluated. At the present time little serious evaluation is occurring in most school systems where new programs have been implemented. In order to do evaluation in more than a haphazard way, evaluation units need to be established within school districts to constantly monitor the progress of changes and to feed back the results to an ongoing decision-making process. One method to design creative complexity into school organizations is to build evaluation units into the midlevel management structure. It is not enough that federally funded projects have their own evaluation efforts; it is not enough that occasional evaluations of specific curricular material

are undertaken. Instead, evaluation must be a vital part of a school system's structure and must supply an ongoing, consistent input into the decision-making and innovation process.

4. Anticipated Results of Additional Complexity

If the organizational structure is enriched as we suggest, then we believe a number of fruitful outcomes will result. First, innovations of greater difficulty can be undertaken because classroom teachers and others directly related to the innovation will have backup support, staff help, and specialized resources at their disposal. Second, middle-level management and increased centralization will have the effect of spreading innovations widely. The typical innovation is geared for classroom use, but with the social isolation of the classroom teacher, additional administrative support and middle-level management are needed to break down the insulation hindering the spread of innovation. Finally, we believe that increased complexity can provide teachers with a career ladder that stimulates the innovative behavior appropriate to different levels within the system. This is no small issue, for a major hindrance to educational innovation is the essentially "flat" teacher career line, with advancement usually restricted to administrative levels and with little incentive structure promoting innovative behavior.

As yet we have no conclusive evidence to confirm or deny these hypotheses. Yet preliminary data from our survey in the Environment for Teaching sample already suggests that schools with high complexity have adopted more innovative practices--exactly as the Illinois and the Bay Area studies had previously shown. Whether they will sustain those over a long period, in comparison with simpler schools, is an

issue for which we are gathering data.

## III. ENVIRONMENTAL FACTORS AND THE INNOVATION PROCESS

Although structural complexity and size are critical elements promoting change, environmental factors may play an even greater role. In recent years organization theorists have paid considerable attention to the environmental setting in which an organization functions. Organizations obtain inputs of various kinds from their environments, process those inputs and feed back finished products to the external world. In the meantime the surrounding environmental setting makes many demands on the organization. School districts in particular have highly permeable boundaries and are susceptible to the influence of their various clients (see Bidwell 1968 and Sieber 1968). The educational tradition of community interest and influence continues up to the present--suburban, middle-class communities have always made high demands on their school districts, and recently minority and low-income neighborhoods have begun to join the "community control" movement.

Environmental variability provides pervasive stimuli to the organization. In a rapidly changing environment expectations increase faster than the services offered and demands for services outrun the ability to pay for them. In a more heterogeneous environment there are diverse demands for services, more varied clientele, and greater competition for scarce resources from the more fragmented socioeconomic and demographic forces. Increased diversity and uncertainty

demand remedial action from the organization--promoting innovation as a response. Corwin, for example, suggests that an organization is more open to change when "It is located in a changing, modern, urbanized setting where it is in close cooperation with a coalition of other cosmopolitan organizations that can supplement its skills and resources." (Corwin 1972, 442). The character of the client population served is a key attribute in the school district's environment, and it determines the demand for services, the scope of activities, and the human resources to be utilized by the district. Similarly, since most inputs in the exchange relationship may be resolved in dollar terms, the community's ability to provide financial resources is a major environmental variable.

In both the Illinois and the Bay Area studies we assumed that demographic data such as population density, urbanism, and the relationship between the school district and other community agencies were reasonable indicators of the variability existing in the schools' environment. In particular, we believed that extremely heterogeneous and changing environments would pose unique problems for school districts, causing them to implement many innovations. Therefore, we selected census-type data indicative of environmental variability and heterogeneity: population density, urbanization, the nonwhite percentage in the district, the amount of home ownership, and the number of other governmental agencies competing for resources.

A. Empirical Results: Environmental Demands Promote Innovation

In the Illinois study there were six indicators of environmental variability, and Table 1 shows that all six have the predicted

relation to innovation. (Expenditure on other public services and home ownership should score low to represent high environmental variability, and thus promote innovation; the other measures should score high.) Four of the six relationships are strong, with high innovation-adopting districts having nearly double the density, about 50 percent higher urbanization rates, about 75 percent higher nonwhite rates, and almost twice as many other governmental agencies in a complex environment. The differences in expenditure rates and home ownership are not as strong, but they are clearly in the predicted direction. Correlational analysis (not shown) backs up these same relationships with a low of $r = .25$ (between nonwhite and innovative) and a high of $r = .37$ (between urban and innovation adoption). The results from the Bay Area study, using similar indicators, were essentially the same: high environmental change and heterogeneity was associated with high innovation.

B. Relations with the Environment that Sustain Innovation

The multiple demands of the environment stimulate innovative behavior to solve the many problems coming from outside. Organizations that truly wish to be innovative, to maintain long-range adaptive behavior, and to be responsive to their external constituencies must learn to build viable linkages with their environment. Building these bridges is difficult, but the following suggestions seem reasonable.

1. Linking Mechanisms

First, school systems must continually strive to develop "linking mechanisms" with their environment. Traditionally, of course,

the school board has been the key link to the outside world. In more recent times, with the growth of community control and the strengthening of teacher unions, other avenues have developed. Many school districts have begun programs of cummunity involvement through policy councils and advisory committees. This strategy is likely to stimulate innovative practices. However, the limited forms of community input used to this point must be enriched with imaginative approaches.

A second "linking mechanism" to the environment should be a continuing program of needs assessment. Most school districts have never had systematic programs of demographic data analysis to chart and anticipate changes in the social structure of their communities. Not even the simple data widely available from the Census Bureau has been adequately used by more than a handful of school districts. Unemployment statistics, wage rates, the economic and job structure of the community, and other important demographic factors are largely ignored in most school planning. This could probably be done most effectively if school districts cooperated and regional data centers were set up for processing information.

Another strategy opening the organization to outside influences would be the establishment of technical advisory boards. Community groups of parents and other lay people have been widely used in education, but it is rare to find long-range technical advice from a panel of outside experts. Frequently school districts try to innovate without adequate technical knowledge. By using an ongoing program of technical advice, rather than one-shot consultants, the

level of expertise and exposure to innovation would be substantially raised. Such advisory boards have been effectively used in government agencies and in research and development centers, but they have had little or no impact on school systems. A skillfully constructed program could give systematic technical help without becoming merely a lucrative consulting job for outsiders.

2. Interorganizational Relations

A second major way that environmental relationships can further innovation is for school systems to cooperate with each other. We have argued that innovations were difficult to promote because school systems are structurally too simple and do not have enough resources or specialized manpower. By sharing resources on a regional basis, small school systems with inadequate facilities could begin to build programs of innovation far beyond their individual capacities. Small colleges have done this for years, sharing libraries, professors, computer facilities, and expensive laboratory equipment. School districts, however, have made little progress in achieving mutual cooperation. Part of the difficulty is the political fragmentation of school districts and the local jealousies resulting from the school's central role as an object of community pride. Nevertheless, mutual sharing of resources seems to be a strategy that could advance innovative behavior.

Just as important, school districts would be stimulated by reaching out to nonschool organizations for help and technical knowledge. Facilities readily available to many school districts are the faculty,

libraries, and laboratories of local colleges or universities. For example, the counseling and advising services of high schools are critical to channeling students into college careers, and many interesting experiments could be arranged around this function. In addition, colleges could provide excellent resource personnel for technical advisory boards in local school districts. Other virtually untapped resources are local industries and governmental agencies that could be strong adjuncts to the educational program. The Philadelphia program of open schools is almost a model in this respect, reaching out to noneducational institutions and drawing them into a beneficial partnership. Only imagination, resources, and trained personnel seem to stand between the school district and a host of creative programs linking other organizations.

3. Boundary Roles

One part of the environmental outreach program must be the creation of specialized roles between the school system and the community. Top administrators of any organization always fill a linking role, and the superintendent of a school district is no exception. Other kinds of linking mechanisms are needed, however, if the openings to the environment are to expand. For example, coordinators for advisory councils and technical advisory boards would be important if such bodies were established. If needs-assessment became an ongoing process within school systems, there should be people with the technical skills and the relationships to outside organizations to gather and process information. If interorganizational relations were created with colleges, with

other districts, or with industry, it would take qualified personnel to fill those boundary roles. In short, if the educational system is going to reach out more effectively to its environment, structural complexity and role differentiation must be built in to support that effort. These boundary roles would probably become major avenues of influence for new educational procedures and processes.

## IV. SUMMARY AND CONCLUSIONS

This article has attempted to do two things. First, it has argued that the traditions of research surrounding innovation and organizational change have in many ways focused on the wrong clusters of variables. In order to study better complex educational innovations and social action programs we must look at new factors. In particular, we have argued that orientations toward the first phases of the innovation process, a concentration on small-scale technical innovations, and individualistic biases have seriously hindered our capacity to understand major educational innovation. In contrast, the analysis would be more productive if it concentrated on complex technologies with unclear evaluations, shifted focus from the individualistic variables to organizational structure, and examined environmental factors more closely.

In the second half of the article we have presented in skeletal form some results from a series of research projects on organizational change that were sponsored at Stanford. Those results argue that a large, complex school district with a turbulent, changing, and heterogeneous environment will probably be much more innovative than a small,

simple district with a relatively stable, homogeneous environment. The basic logic concerns a "demand structure": (1) Size makes a series of demands about coordination, control, and complexity to which a district must respond. (2) Differentiation and structural complexity produce cadres of specialists concerned about solving the task demands within their specialized realms. Consequently, these specialists search for new ways of handling the demands within their specialized units. (3) The environment surrounding a district makes numerous demands because of its heterogeneity and change.

These structural characteristics of school districts are powerful explainers of innovative behavior. Certainly, they cannot replace other interpretations such as the personality characteristics of administrators or the unique character of the innovations themselves. However, when coupled with these alternative explanations, the structural variables account for much of the innovative behavior.

These findings have a number of serious policy implications for people who wish to cause change in educational or other types of organizations. First, the findings argue that size is an important factor in innovation and that critical masses of organizational participants are needed to generate a "demand structure" to facilitate innovation. School administrators throughout the country have been arguing for years that consolidation of small districts would result in efficiencies and economic benefits; our results suggest that consolidation would in addition promote innovative practices.

Second, the findings suggest that differentiation and structural complexity are critical for innovation. In many ways relatively undifferentiated school systems at the small end of the scale do not

have enough problem-solving capacity nor enough specialized experts to promote innovative behavior. For this reason deliberate attempts at differentiation might be expected to produce higher levels of innovation. For example, specialized "change agents" could be employed to disseminate emerging educational innovations and technology. Other strategies, such as district level agencies to gather data and process information, as well as district wide committees on innovation, might foster innovation through deliberate differentiation and specialization.

Finally, our data suggest that environmental variability is a critical factor in promoting innovation. Consequently, a district desiring innovation could promote that process by opening channels of communication between itself and its client environment. Serious innovation has often occurred when community control advocates have gained enough power to have significant input into school districts. In effect, we are arguing that a school district that wants to be innovative must make itself more <u>vulnerable</u> by deliberately creating channels of communication and influence to its external environment.

Our last point concerns the overall orientation to the problem of innovation and change in education. It seems critical to make one final shift in our perspective. Our very terminology pulls us in the wrong direction, for the "adoption of innovations" leads us to think almost instinctively of a commercial process whereby products are distributed from a manufacturer to a potential buyer. Under that kind of mentality, members of the educational research and development community may be tempted to become hucksters of particular

products. We have all seen cases of developers whose egos were so tied up in a particular "innovation" that they could not grapple with the larger issues. In their haste and urgency to sell a particular product they overlooked the need to build problem-solving capacity in the organizations they were supposed to be serving. Tied to a single product, they failed to create an innovative environment in which other alternatives could be considered and other options explored.

In an insightful comment, Donald Campbell suggests that the tradition of social innovation which ties itself to particular products and techniques has led to social waste and has forced us into a posture of defending innovations that did not deserve defending. Campbell argues instead that we must develop a risk-taking approach to solving social problems, exploring a wide variety of innovations and techniques:

> If the political and administrative system has committed itself in advance to the correctness and efficacy of its reforms, it cannot tolerate learning of failure. To be truly scientific we must be able to experiment. We must be able to advocate without that excess of commitment that blinds us to reality testing. . .
>
> One simple shift in political posture which would reduce the problem is the shift from the advocacy of a specific reform to the advocacy of the seriousness of the problem, and hence to the advocacy of persistence in alternative reform efforts should the first one fail. The political stance would become: "This is a serious problem. We propose to initiate Policy A on an experimental basis. If after five years there has been no significant improvement, we will shift to Policy B." By making explicit that a given problem solution was only one of several that the administrator or party could in good conscience advocate, and by having ready a plausible alternative, the administrator could afford honest evaluation of outcomes. Negative results, a failure of the first program, would not jeopardize his job, for his job would be to keep after the problem until something was found that worked.
>
> (Campbell, in Weiss 1972, 189).

We must be in the business of disseminating particular educational products, we must be in the business of creating educational organizations that have built-in capacities for assessing their needs, creating viable alternatives, and trying a variety of solutions. The adoption of any specific innovation is a sideline activity that must not consume our energies. Building flexible and creative organizations responsive to their environments must be our continuing enterprise, organizations with built-in reserves of expertise and resources to sustain long-range problem-solving.

## REFERENCES


Argyle, Michael. "The Social Psychology of Social Change" in T. Burns and S. B. Saul (eds.), SOCIAL THEORY AND ECONOMIC CHANGE, London: Tavistock, 1967, 87-101.

Argyris, Chris. INTERPERSONAL COMPETENCE AND ORGANIZATIONAL EFFECTIVENESS. Homewood, Illinois: Dorsey, 1962.

Baldridge, J. Victor. "Organizational Change: Political Systems versus Human Relations Strategies." EDUCATIONAL RESEARCHER, 1:1 (February, 1972), 4-10.

Baldridge, J. Victor. POWER AND CONFLICT IN THE UNIVERSITY, New York: Wiley, 1971.

Baldridge, J. Victor, Atkin, J. Myron and Howsam, Robert. "A Program for Increased Organizational Effectiveness." Minneapolis, Minnesota: University of Minnesota, College of Education, 1972.

Baldridge, J. Victor and Burnham, Robert. THE ADOPTION ON INNOVATIONS: THE EFFECT OF ORGANIZATIONAL SIZE, DIFFERENTIATION, AND ENVIRONMENT. Stanford, California: Stanford Center for Research and Development in Teaching, R & D Memorandum No. 108, May 1973.

Baldridge, J. Victor and Johnson, Rudolph. THE IMPACT OF EDUCATIONAL R & D CENTERS AND LABORATORIES: AN ANALYSIS OF EFFECTIVE ORGANIZATIONAL STRATEGIES. Washington, D. C.: National Academy of Education, May 1972.

Bennis, Warren G. CHANGING ORGANIZATIONS. New York: McGraw-Hill, 1966.

Bidwell, Charles E. "The Schools as a Formal Organization" in James G. March (ed.) HANDBOOK OF ORGANIZATIONS. Chicago: Rand McNally, 1965, 972-1022.

Blau, Peter M. "A Formal Theory of Differentiation in Organizations." AMERICAN SOCIOLOGICAL REVIEW, 35:2 (April 1970) 201-218.

Burnham, Robert A. ENVIRONMENTAL AND STRUCTURAL DETERMINANTS OF INNOVATION IN SCHOOL DISTRICTS. Stanford University, unpublished doctoral dissertation, 1972.

Carlson, Richard O. ADOPTION OF EDUCATIONAL INNOVATIONS. Eugene, Oregon: University of Oregon Press, 1965.

Carlson, Richard O. et. al. CHANGE PROCESSES IN THE PUBLIC SCHOOLS. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1965.

Clark, David L. and Guba, Egon. "An Examination of Potential Change Role in Education." NEA, Center for Study of Instruction, Arelie House Conference, October 1965.

Coleman, James Samuel, Katz, Elihu and Menzel, Herbert. MEDICAL INNOVATION: A DIFFUSION STUDY. Indianapolis: Bobbs Merrill, 1966.

Corwin, Ronald G. "Strategies for Organizational Innovation: An Empirical Comparison." AMERICAN SOCIOLOGICAL REVIEW, 37 (August 1972), 441-454.

Crain, Robert L. INTER-CITY INFLUENCE IN THE DIFFUSION OF FLUORIDATION. University of Chicago, Department of Sociology, unpublished doctoral dissertation, 1962.

Dal Santo, John. SCHOOL ADMINISTRATORS' PERCEPTION OF CRITICAL FACTORS OF PLANNED CHANGE IN SELECTED ILLINOIS SCHOOL DISTRICTS. University of Illinois, unpublished doctoral dissertation, 1968.

Gorth, William Philip. THE LOCI OF AUTHORITY IN SCHOOLS DURING CHANGE. Stanford University, unpublished doctoral dissertation, 1971.

Gross, Neal, Giacquinta, Joseph B. and Bernstein, Marilyn. IMPLEMENTING ORGANIZATIONAL INNOVATIONS. New York: Basic Books, 1971.

Guba, Egon G. "Diffusion of Innovations." EDUCATIONAL LEADERSHIP, 25 (1968), 292-295.

Hage, Jerald and Aiken, Michael. SOCIAL CHANGE IN COMPLEX ORGANIZATIONS. New York: Random House, 1970.

Hamrin, Gerald W. AN ANALYSIS OF FACTORS INFLUENCING EDUCATIONAL CHANGE. Stanford University, unpublished doctoral dissertation, 1970.

Havelock, Ronald G. PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE. Ann Arbor, Michigan: Institute for Social Research, 1973.

Katz, Daniel and Kahn, Robert L. THE SOCIAL PSYCHOLOGY OF ORGANIZATIONS. New York: Wiley, 1966.

Katz, Elihu, Levin, Martin L. and Hamilton, Herbert. "Traditions of Research in the Diffusion of Innovation." AMERICAN SOCIOLOGICAL REVIEW, 28:2 (February 1963), 237-252.

Knight, K. E. "The Innovative Organization: Research Design for an Exploratory Study of Innovations in Teaching." Stanford University, Center for Research and Development in Teaching, 1968, (mimeographed).

Knight, Olan L. CHARACTERISTICS OF EDUCATORS INVOLVED IN THE CHANGE PROCESS. Stanford University, unpublished doctoral dissertation, 1970.

Lawrence, Paul R. and Lorsch, Jay W. ORGANIZATION AND ENVIRONMENT: MANAGING DIFFERENTIATION AND INTEGRATION. Boston: Harvard University Graduate School of Business Administration, 1967.

Leavitt, Harold J. "Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches" in James G. March (ed.), HANDBOOK OF ORGANIZATIONS. Chicago: Rand McNally, 1965.

Menzel, Herbert and Katz, Elihu. "Social Relations and Innovation in the Medical Profession: The Epidemiology of a New Drug." Public Opinion Q., 19 (1955), 337-352.

Miles, Matthew B. (ed.) INNOVATION IN EDUCATION. New York: Columbia University, Teachers College, Bureau of Publications, 1964.

Miles, Matthew B. "Planned Change and Organizational Health: Figure and Ground" in CHANGE PROCESSES IN THE PUBLIC SCHOOLS. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1965, 11-34.

Mort, Paul R. and Cornell, Francis G. ADAPTABILITY OF PUBLIC SCHOOL SYSTEMS. New York: Columbia University Teachers College, Bureau of Publications, 1938.

Mort, Paul R. and Cornell, Francis G. AMERICAN SCHOOLS IN TRANSITION. New York: Columbia University Teachers College, 1941.

Oliver, Albert I. CURRICULUM IMPROVEMENT. New York: Dodd Mead, 1965.

Penny, William A. CHARACTERISTICS OF EDUCATORS INVOLVED IN THE CHANGE PROCESS. Stanford University, unpublished doctoral dissertation, 1970.

Rogers, Everett M. DIFFUSION OF INNOVATIONS. New York: Free Press, 1962.

Runkel, Philip J. LINKING ORGANIZATIONS TO MAINTAIN ORGANIZATIONAL DEVELOPMENT AND TRANSMIT INNOVATION. Eugene, Oregon: Center for the Advanced Study of Educational Administration, October, 1970.

Schmick, William A. THE INFLUENCE OF ORGANIZATIONAL POSITIONS ON CHANGE IMPLEMENTATION IN HIGH SCHOOLS WITH ELECTED AND APPOINTED DEPARTMENT HEADS. Stanford University, unpublished doctoral dissertation, 1970.

Shepard, Herbert A. "Changing Interpersonal and Intergroup Relationships in Organizations" in James G. March (ed.), HANDBOOK OF ORGANIZATIONS. Chicago: Rand McNally, 1965, 1115-1144.

Shultz, James and Winstead, Philip. THE EDUCATIONAL DEVELOPMENT OFFICER: A CATALYST FOR CHANGE IN HIGHER EDUCATION. Durham, N. C.: National Laboratory for Higher Education, June 1971.

Sieber, Sam D. "Organizational Influences on Innovative Roles" In Terry L. Eidell and Joanne M. Kitchel (eds.) KNOWLEDGE PRODUCTION AND UTILIZATION IN EDUCATIONAL ADMINISTRATION. Eugene, Oregon: Center for Advanced Study of Educational Administration, 1968, 120-142.

Stufflebeam, Daniel L. et. al. EDUCATIONAL EVALUATION AND DECISION-MAKING. Bloomington, Indiana: Phi Delta Kappa, 1970.

Weiss, Carol H. EVALUATING ACTION PROGRAMS: READINGS IN SOCIAL ACTION AND EDUCATION. Boston: Allyn and Bacon, 1972.

# FOSTERING CHANGE FROM WITHOUT: A PRACTICAL PERSPECTIVE

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# FOSTERING CHANGE FROM WITHOUT: A PRACTICAL PERSPECTIVE

## INTRODUCTION

Our response to the question "What Does Research Say About Getting Innovations Into Schools?" is based on our experience as an organization which is attempting to bring about change in schools.

In the pages that follow, we have attempted to answer the focusing question from a practical vantage point, drawing on supporting work where appropriate. By grounding our discussion in this real world context, we hope to add a perspective which will enrich the symposium dialogue.

The paper presents a general description of our *modus operandi*, its relationship to other change efforts, and a description of a Developmental Model of Organizational Renewal, evolved from an analysis of our efforts in the past three years, which we have found useful in analyzing our own work. A case drawn from our recent work then extends the discussion and serves as a springboard for discussion.

BACKGROUND

The NETWORK OF INNOVATION SCHOOLS is a non-profit organization which has been engaged in staff development efforts with a variety of public, private and parochial schools in Massachusetts since 1969. [The reader interested in an extended treatment of the NETWORK's history is referred to Crandall (1970, 1971).] These efforts have as their long-term goal the development of self-renewal capacities within the client organizations. Thus, the "innovation" which has been the central focus of our attention is a set of process skills, with systematic problem-solving techniques at the core. Despite this central thrust, our actual work with clients has also dealt directly with more tangible innovations as short-term vehicles along the road toward organizational renewal. This phenomenon has led to some important learnings for us about what it takes to bring about change in schools.

Our primary contacts with schools are maintained by a team of trained professionals who devote a large percentage of their time to field work. We concur with the assumption that meaningful change in schools requires the intervention of outside experts (Miles 1964). Further, our use of field staff acknowledges the importance of personal contact as an on-going requirement for change (Wolf and Fiorino 1971; Sieber et. al. 1972; Crandall and Austin 1973). From the outset, these field staff have been referred to as "linking agents" and have interacted with clients in much the same way as the "educational extension agents" envisioned by NIE (Sieber et. al. 1972; Mick, Paisley & Paisley 1973). As such, they have experienced the inevitable tension resultant

from the attempt to operationalize a role which consolidates the "conveyor of knowledge" [cf. Havelock (1968) and also Sieber's Rational Man strategy (1968, 1972)] and the "process helper" [cf. Havelock (1970) and also Sieber's Cooperator Strategy (1968, 1972)]. As Sieber has noted in his evaluation of the Pilot State Dissemination Project (1972), a field agent's success is dependent on the agent's facility in shifting from one role to the other as the situation demands.

## EARLY EFFORTS

Our initial efforts with teachers were based on the belief that if teachers could be trained in problem-solving skills, they could then apply these skills to any problem situation. Our field agent initially would convene the faculty for one or more problem identification sessions. Once problems were identified, Action Teams (problem-focused small groups) were formed to be coordinated by Inside Helpers. The Inside Helpers (self-selected) were the targets for training sessions in problem-solving techniques conducted by the linking agents. The specific techniques were based on the classical rational problem-solving sequence (Lippitt, Watson and Westley, 1958) and utilized techniques adapted from NWREL's RUPS training program (Jung et. al. 1970). [Eiseman's (1973) expanded version of this linear-rational model also served us as a handy check on our own efforts.]

Our initial plan called for the linking agent's role vis-a-vis the Action Teams to be that of "conveyor" bringing to the problem-focused groups information on the problems they were attacking. Ultimately, we hoped to disengage, leaving each school with a built-in renewal capacity:

the ability to identify and solve problems by themselves in self-selected groups spearheaded by the Inside Helpers. Only minimal technical assistance and/or information-gathering would be needed from the NETWORK. This approach viewed each group as moving from a state of high dependency (on the NETWORK) through to a state of independence, with the Inside Helpers taking on the previous functions of the NETWORK vis-a-vis the larger faculty.

It would be fair to say that these early attempts were less than completely successful. In virtually every case, we were unable to sustain sufficient interest in, and/or overcome initial resistance to, directed training in problem-solving techniques. Our experience would seem to corroborate the conclusion of Mick et. al. (1973) that such training is probably more appropriate at a later phase of intervention. There seemed to be a basic mismatch between our intervention strategy and the felt needs of the schools.

All aspects of this mis-diagnosis cannot be treated adequately in this short document. However, a summarization of what we believe to be the core issue may be instructive and especially pertinent to the question we are examining in this symposium.

## STABLE ORGANIZATIONS VS. OPEN SYSTEMS

The central problem revolves around the recurring dilemma faced by today's schools. In the opinion of many well-known observers and analysts of the current scene, schools are in desperate need of revitalization in order to respond to the rapidly changing requirements of a society experiencing ever more frequent and more complex advances

in technology. This state of affairs clearly suggests the need for schools to become dynamic, adaptive institutions. However, the survival of schools to date, can be traced to their success in maintaining themselves as stable organizations. Indeed, the cries of dismay from "outside experts" notwithstanding, schools are functioning essentially as desired by the society at large (cf. the 1973 Gallup Poll). Williamson, (1972) in an eloquent extended treatment of this subject, summarizes the situation as follows:

> In the past century, modern industrialized society, particularly in this country, has been one of rapid advance in a technological and economic sense; yet it has been change amid a basically stable framework of fundamental social values and purpose. To insure optimal effectiveness and efficiency under conditions of relative social stability, an organization must be characterized by competence and controlled, disciplined, and predictable behavior... The public mandate to the schools has been essentially that of preparing competent, stable, loyal and disciplined young men and women who could function successfully in a society dominated by the values and needs of bureaucratic organizations. It is no accident that the bureaucratic substance of society's mandate in turn made bureaucracy the logical organizational form of the schools.

In the face of such massive pressure to preserve the status quo, we shouldn't be surprised at the hesitance of teachers and administrators to venture out of their current "safe corners." We have reluctantly concluded that it is unrealistic to hope that most schools will change dramatically in the next ten years. Nonetheless, lasting and desirable change continues to be a possibility for many schools. This view, of limited but real promise, is shared by Mick et. al. (1973):

> ... an educational extension system must deal with educators possessing about the same competencies they now possess, located within an educational structure similar to the present one, inadequately funded vis-a-vis stated goals, and assisted only by non-magical R & D and technology. The most appealing vision of education cannot be achieved within such constraints, but much can be done if the constraints are recognized and accounted for.

## THE NEED FOR DIFFERENTIATION OF INTERVENTION

Our experience has shown that the typical teacher in the typical school views consultants as "solution-givers" (Havelock 1970). Interactions taking place under such conditions maintain a state of client dependency contrary to the notion of a problem-solving individual or organization. It was the conscious rejection of the "solution-giver" role which led the NETWORK to initially attempt interventions focused on developing problem-solving skills which would diminish client dependence on outsiders (except for specific, targeted assistance in solving problems identified by school-based teams). Our lack of success certainly does not mean we think the strategy lacks potential, only that it is not likely to succeed in most school situations given the present nature of such organizations and their members. Indeed, recent successes in CASEA's Program 30 in Oregon speak to the positive possibilities (Schmuck and Runkel 1970; Schmuck, Runkel et. al. 1972).

A key feature of our strategy was the "problem-identification session", designed to be a dynamic needs assessment vehicle. However, needs assessment, to be truly effective, requires: clarity of goals, a realistic assessment of the present state, and some sense of the dis-

crepancy between the two. That these requisite conditions do not characterize most educational institutions has been noted by Miles (1965) and Sieber (1968) among others. Thus, as has been noted most recently by Ely (1973), "we end up with a list of wants rather than needs." It appeared, after several abortive efforts, that if we intended to become process helpers to the schools and individuals with whom we worked, we would first have to behave as solution-givers.

We have been able to reconcile the seemingly contradictory nature of these two roles by reconstructing our past experiences and conceptualizing a model to guide our future actions and gain a useful perspective on our goals vis-a-vis self-renewal. With apologies to those who are up to their ears in models, we would like to share our conceptualization with you. It should be stressed that this model is one which we have found helpful in grappling with questions about our progress in a given school. As such it may be more important as an indicator of our own idiosyncratic view of the world than as a model useful to others in other settings.

## A DEVELOPMENTAL MODEL FOR ORGANIZATIONAL RENEWAL

The model presented in this section views organizations as displaying behavior along two critical dimensions, both of which need to be considered during initial diagnosis, early intervention, and subsequent intervention phases if a self-sustaining capacity for change is to occur. It is an adaptation of the Life Cycle Theory of Leadership developed by Hersey and Blanchard (1969, 1972). We have taken their concepts re: situational leadership and applied them to findings re:

change in organizations drawn from an analysis of our experiences in schools.

The first dimension is the "KNOWLEDGE UTILIZATION" (KU) dimension. For our purposes, we are defining KU behaviors as those which have as their focus the acquisition of new knowledge or techniques related to solving problems which have a content emphasis. Schools exhibiting KU behavior are likely to be seeking immediate solutions to their problems. Their primary concern is on getting the what of change instituted as quickly as possible. Schools exhibiting this behavior look to outside experts to provide the answers, i.e., function as solution-givers.

Obviously a school as an open, adaptive system must be constantly seeking out new knowledge and using it to modify the way it functions. What is often the case, however, is that the new knowledge (solution) is presented without the implementors of the new knowledge ever having been aware of a problem. The number of dollars spent on behavioral objectives in-service workshops, for example, must be astronomical. Yet the number of teachers who have changed their mode of instruction from one which focuses on activities to one which focuses on outcomes is still quite small. Where is the impact of this new knowledge? Lost, we would say, somewhere between the teacher's inability to conceive of the need to change the instructional focus and the lack of demands by the school system to teach in such a way that it would be impossible for behavioral objectives to be avoided. In short, for change to take place, the input of new knowledge in and of itself is not enough.

This brings us to the second dimension of the model, the "SELF RENEWAL" dimension. SR behavior as used here refers to those organiza-

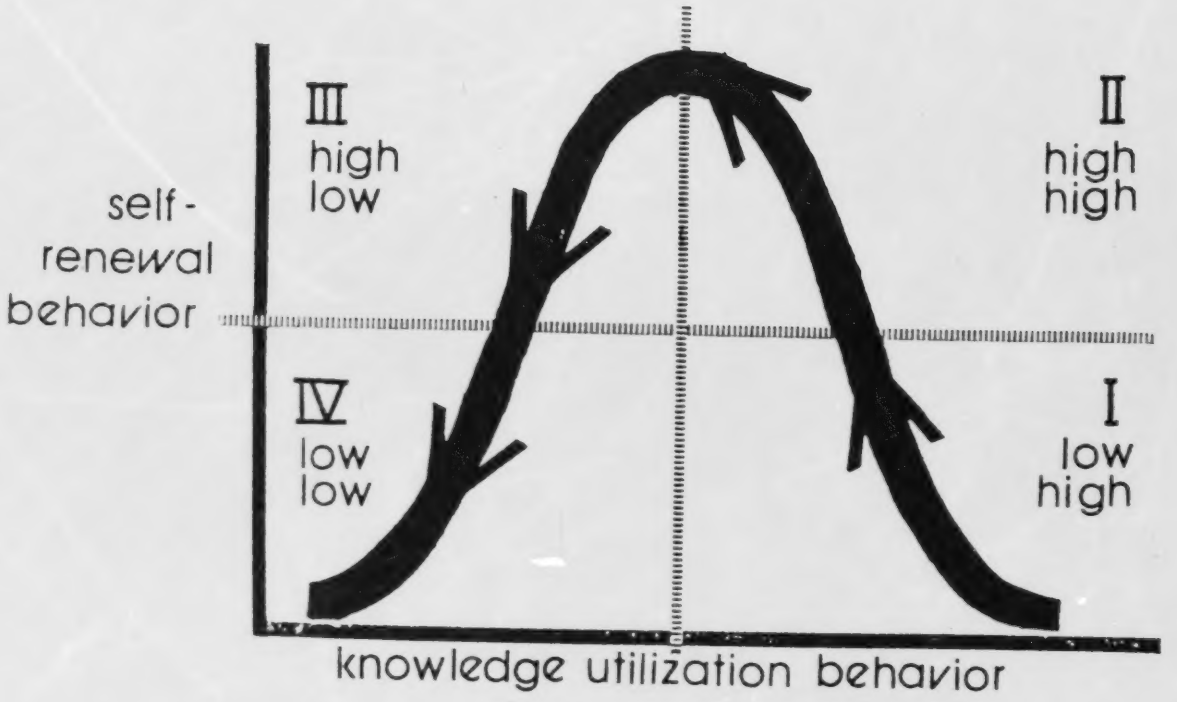
tional behaviors characterized by emphasis on the process aspects of problem solution. Schools exhibiting SR behavior are developing or have developed capacities to analyze/diagnose their own problems, set clear goals, systematically generate sets of alternative solutions, select and implement one, evaluate its effectiveness, and make such revisions in progress as are required. Such schools recognize that the how and why of change is as important as the what. They would recognize that outside experts can be helpful in a wide variety of ways such as serving as facilitators with an outside perspective. These schools see themselves as in control of their future, capable of planning for the middle and long-term, and responsible for their own ultimate success or failure. They take risks, are more open to fresh alternatives, and are more comfortable interacting with consultants as co-equal professional partners in a shared enterprise. When SR behaviors are fully developed and institutionalized, mechanisms are ready to come into play which enable the organization to respond positively and appropriately to new demands.

Getting SR behaviors fully developed and institutionalized is no easy task. If certain schools may be faulted for providing new knowledge in a vacuum, other schools may be equally at fault for spending too much time on process, avoiding making a decision, for example, because the problem may not have been accurately identified; or spending time on goal setting when students (either figuratively or literally) are wasting away in classroom activity better suited to another century.

The Developmental Model conceptualizes the possibility of change activity taking place along both dimensions, Knowledge Utilization and

Self Renewal. These two dimensions may be depicted graphically. In the model, organizations can be described as residing at some point on a continuum which progresses from behavior restricted solely to KU through progressively more sophisticated stages to a point where both sets of behaviors are present. With both behaviors operant, the organization has the capacity for self-renewal and dynamic adaptation to new demands on the system.

For purposes of simplification, the model depicts four quadrants which can be used to classify an organization based on its dominant behavior(s). It should be noted that a given school may be "located" at any point on the continuum at a given point in time. In fact, a "fully-developed" organization (low, low) has the capacity to move itself into the appropriate mode (quadrant) in response to a particular situation.




DEVELOPMENTAL MODEL of ORGANIZATIONAL RENEWAL

The key features distinguishing the quadrants are cast in terms of the behaviors of the clients and the actions of the consultant:

Quadrant I - High Knowledge Utilization, Low Self-Renewal

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|---|---|
| CLIENT PERSPECTIVE: | Need/want for answers. Concerned with solving immediate problems in the shortest possible time. Emphasis on content of the innovation, the what of the new curriculum, getting the new organizational arrangement functioning, etc. Readiness to "learn" from experts only. (Clients do not consider each other valid sources of expertise). |
| CONSULTANT PERSPECTIVE: | Behavior is reactive, based on felt needs (wants) of clients. Credibility and perceived usefulness depend on delivery of knowledge about specific innovations. Consultant as source and/or conveyor of wisdom. |
| DESIRED OUTCOMES: | Creation of greater awareness, understanding re: the innovation. Acquisition of new techniques which have "Monday morning" payoff by expanding the repertoire of teaching skills, enlarging the clients "safe corner"/confidence level and setting the stage for greater risk-taking. Develop trust/credibility as basis for Quadrant 2 activities. |

Quadrant II - High Knowledge Utilization, High Self-Renewal

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| CLIENT PERSPECTIVE: | Concerned with problem areas with middle range implications and a process focus within a content context. Readiness to be the source of expertise in directed interactions. Awareness that they have a stake in the how of an innovation. |

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|---|---|
| CONSULTANT PERSPECTIVE: | Pro-active re: structuring meetings, establishing agendas, focusing discussion, calling for closure, noting consensus, outlining next steps. Blends in content expertise only to the extent that it won't jeopardize group "ownership" of the outcomes. Builds on credibility developed in Quadrant I. |
| DESIRED OUTCOMES: | Decisions, plans of action, ongoing activities involving clients in doing/renewing. Client awareness that meetings have gone more smoothly, been more efficient/effective than before; clients feel increased "power" over their situation; boundaries of "safe corner" expand vis-a-vis "legitimate topics for attention", skills one should have, etc. |

Quadrant III - Low Knowledge Utilization, High Self-Renewal

| | |
|---|---|
| CLIENT PERSPECTIVE: | Process considerations predominate. Concern with acquiring and using skills modeled by consultant. Sees utility in investigating the why of innovations. Has adequate comfort re: content problems, e.g., in full control of instructional process. Readiness to learn/practice new skills in a more interactive environment calling for initiative and creative thought. |
| CONSULTANT PERSPECTIVE: | Initially that of trainer for problem-solving, goal-setting, and planning type skills. Attention to explicitly building bridges to the real world situation of the clients vs. assuming that participation in exercises results automatically in the concomitant intellectual growth necessary for generalizing to the practical setting. Subsequent role would call for process observation and facilitation of efforts of others. Reporting, summarizing, and synthesizing functions might come into play. |

DESIRED OUTCOMES:

Trained cadres of insiders capable of handling their own meetings with minimum assistance. Awareness of need for on-going help on team-building, communicating, decision-making. Greater initiative re: seeking new problems to solve. Expansion of "safe corner" and increased feeling of "power" due to increased competence. Development of professional/colleagual relationship with peers and consultant.

Quadrant IV - Low Knowledge Utilization, Low Self-Renewal

This quadrant is characterized by a fully-functioning school at a given point in time. As a result of a series of successive approximations through Quadrants I - III, the school has developed an adaptive capacity which enables it to marshall resources (internal and external) to recycle to one of the quadrants as needed. The capacity for self-renewal has been institutionalized.

Thus, to insure that the intervention leads to progress along the continuum, the consultant must both structure experiences and capitalize on fortuitous circumstances in order to elicit successive "ahas!" from the participants. Such synthesizing experiences "locate" a group on the continuum and help the consultant evaluate the appropriateness of his in-progress intervention activity. The long-term goal of organizational self-renewal can remain clear (or can be brought back into focus) even during initial phases when the emphasis might be on content innovations.

In the next section, highlights of an actual case are presented in order to illustrate the progress of a typical group within a typical school staff. The events prior to the May 1972 Problem Identification Workshop are presented as background to the specific intervention cycle.

Shady Grove High School

Highlights of an Intervention

| | Keystone Events | Commentary |
|---|---|---|
| 11/69 | Initial expression of interest in NETWORK from Superintendent. | The Superintendent realized early (prior to the school's opening) that outside help would be beneficial. He had determined that the school would be characterized by team teaching, individualized instruction, non-gradedness, and use of small groups. These goals were 'dreams' which had not been integrated into the planning for either the facility, staffing, or curriculum development. |
| Fall 1970 | Course in Team Teaching offered. | In response to the Superintendent's request, the NETWORK presented a semester-long course for teachers who would be joining the faculty when the school opened in 1971. |
| Summer 1971 | Summer Institute on Developing Learning Activity Packages (LAPs). | The Superintendent had determined that the best way to individualize programs was the utilization of LAPs. A large block of teachers participated in a six-week workshop run by an organization other than the NETWORK. We assisted the other group throughout, giving special attention to the Shady Grove teachers. |

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| 9/71 | School officially open. | The building opened two weeks behind schedule and was not fully outfitted until the end of the year. This state of affairs was obviously an important factor influencing the staff's lack of readiness for much of anything other than getting physically settled. |
| 1971-1972 | Work with administrators. | Given the conditions the teaching staff faced, we spent the bulk of our time during the school year in consultation with the Superintendent. Late in the year, we became involved tangentially in the school's first contract negotiation. Though we still had some contacts with the faculty, we were concentrating on the higher levels of the administration and became identified with them. This was to cause re-entry problems later with the faculty. |
| 5/72 | Problem Identification Workshop. | In an effort to gain current data about the school's needs as viewed by the staff, we conducted a workshop which generated data via both small group, consultant-directed problem identification sessions and post-session questionnaire. The output was summarized for feedback to the faculty and used as input to our planning for summer workshop sessions. Problems identified fell into both content/curriculum areas (Quadrant I) and process/procedural areas (Quadrant II). |
| 7/72 | Summer Workshop in Curriculum Building | This was a clear Quadrant I activity. Although the workshop was boycotted by 2/3 of the factlty due to a breakdown in contract negotiations, a productive series of input sessions on various techniques for developing an individualized curriculum based on LAPs was presented. |

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| 9/72 | Opening Workshop. | Our initial plan was to spring off the data from the May problem identification workshop and organize small groups to work on both problem areas - a mix of Quadrant 1 and Quadrant 2 activity as appropriate. Two factors quashed this notion: 1) The faculty had never received the data summary - the Principal had stopped distribution because the results were too "hot" but hadn't told us; and 2) Even when the data was finally supplied and reviewed, the majority of the faculty wanted to know what we had done about the problems. (Quadrant 1 behavior). After all, they had identified the problems (for us), we were the experts, where were the solutions? |
| 9/72 | Planning Group Formation. | Despite the rather dismal general picture, we were successful in structuring a portion of the opening workshop in a way that allowed/caused ten teachers to risk being very vocal, commit themselves to doing something about their situation, and allowing us to help them channel their activities. Enough had come together for them (an aha!) that they saw the importance of moving into a new mode of behavior. |
| 9/11/72 | Planning Group Plans. | These ten teachers formed a planning group which met throughout the early fall in a configuration which included the Network linking agent as the chairman/secretary of the group. He took responsibility for getting the agenda up and out on newsprint, asking focusing questions, being sure decisions were made and responsibility for next steps taken, preparing the minutes and distributing them. (This was done using plain bond vs. NETWORK stationery to preserve the group's |

ownership of the contents). A prime example of Quadrant 2 activity.

During this period, the group recruited additional members to expand their representation and requested that key administrators sit with them regularly. They planned a half-day workshop for the total faculty, negotiated for release time and gathered data from the total staff regarding priority areas (problems) to be addressed during the half-day.

11/72 Total Faculty Workshop.

Based on the data received from their survey, the planning group assigned each of the faculty to one of nine small groups to make recommendations (generate solutions). Each small group was chaired by a member of the planning group. The half-day workshop was opened by a member of the planning group. Her opening statement speaks to the insights they had experienced while working with the NETWORK:

> "Their [the NETWORK's] purpose is to help us to help ourselves--to lead and guide us -- to help us to find our way -- to sort out our difficulties and seek solutions to our problems. We have allowed the NETWORK to plan and organize our meetings, and then we complained about the organization and content. Finally, a group of us volunteered to set up the next workshop and we have... The ideas are all ours. We hashed over and over many of the same things that have been hashed over before, decided what was most pertinent and necessary to our current situation, and then organized today's workshop to

work on those problems and hopefully to find some solutions. If you have any complaints about today's workshop, they should be directed to us, the Planning Committee, not the NETWORK."

At the close of the workshop, recommendations (possible solutions) had been listed for each of the nine problem areas. These were shared with the total group as the last activity of the day. During this final segment, many expressed concern that the work of a small group didn't really represent the thoughts of the total faculty.

11/72 - 12/72 Followup Activities

Responding to their colleagues' concern, the planning group developed separate questionnaires for each of the nine areas which were distributed to the faculty. Better than 75% responded, and the results were tabulated for consideration by the planning group. In the majority of the nine areas, additional ad hoc meetings by the original groups from the November workshop preceded submission of findings to the planning group. These ad hoc meetings were not attended by our linking agent.

During this stage, the planning group was meeting for what were essentially "input to the key administrators for decision" sessions. The data summaries were coming in on a staggered basis and, as they did, were considered in a discussion/decision session. Our linking agent's role was primarily that of observer.

By the time of the Christmas break, decisions had been made and/or next steps for further data gathering outlined on all major areas.

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| 1/73 - 6/73 | Recycling | During the first half of the school year, the group had moved from simple reliance on the NETWORK for solutions (Quadrant I) through a series of activities which took them well into Quadrant II. Given the nature of the problem areas, i.e., most were curriculum-based, the group, quite appropriately, moved to a cycle of individual and departmental curriculum development which did not call for further meetings of the Quadrant II variety. |
| 7/73 - 8/73 | Summer Curriculum Workshops. | During July and August, small groups of teachers were engaged in curriculum writing. We acted as a resource to them and to new faculty who dropped in for pre-orientation, providing information about curriculum development, instructional alternatives, and student activities. |
| 8/73 | Orientation for new Teachers. | A two-day workshop for new teachers which introduced the school's preferred teaching methodology, i.e., LAPs, was conducted by the NETWORK's linking agent. This was Quadrant I activity with a new group. |
| 9/73 - ???? | The Future | We predict that the future will hold a number of recurring cycles such as the one reported above. Each cycle (QI - QII - QI) is essentially a successive approximation which should expand the "safe corners" of the individuals, groups, and school and bring them closer to readiness for Quadrant III activity. We anticipate a continued need to operate at different levels with different groups, and are not closing out the possibility of "spontaneous" growth to Quadrant III behavior. |

## REFERENCES


Crandall, D. O. "The Network of Innovative Schools - Conceptualization and History." School of Education, University of Massachusetts, Amherst, 1970 (mimeo).

Crandall, D. P. "The Elementary Principal and the Network - A Strategy for Collaboration." MASSACHUSETTS ELEMENTARY SCHOOL PRINCIPALS ASSOCIATION NEWSLETTER, January 1971.

Crandall, D. P. and Austin, S. "A Field Application of the Far West Lab Model: The Role of the Linking Agent in Affecting Educational Change." Paper presented at the annual meeting of the American Educational Research Association (AERA), New Orleans, Louisiana.

Eisman, J. W. "Personal Communication." University of Massachusetts, 1973.

Ely, D. P. "The Myths of Information Needs." EDUCATIONAL RESEARCHER, April 1973.

Gallup, G. H. "5th Annual Gallup Poll of Public Attitudes Toward Education." PHI DELTA KAPPAN, September 1973.

Havelock, R. G. "Dissemination and Translation Roles" in T. L. Eidell and J. M. Kitchel (eds.), KNOWLEDGE PRODUCTION AND UTILIZATION IN EDUCATIONAL ADMINISTRATION. Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration, 1968.

Havelock, R. G. A GUIDE TO INNOVATION IN EDUCATION. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, 1970.

Hersey, P. and Blanchard, K. H. "Life Cycle Theory of Leadership." TRAINING AND DEVELOPMENT JOURNAL, May 1969.

Hersey, P. and Blanchard, K. H. MANAGEMENT OF ORGANIZATIONAL BEHAVIOR UTILIZING HUMAN RESOURCES, 2nd edition. Englewood Cliffs, New Jersey: Prentice-Hall, 1972.

Jung, C., Pino, R. and Emory, R. RUPS: RESEARCH UTILIZING PROBLEM-SOLVING, LEADERS MANUAL. Northwest Regional Educational Laboratory, Portland, Oregon, 1970.

Lippitt, R., Watson, J. and Westley, B. THE DYNAMICS OF PLANNED CHANGE. New York: Harcourt, Brace and Co., 1958.

Mick, C., Paisley, M. and Paisley, W. DEVELOPMENT OF TRAINING RESOURCES FOR EDUCATIONAL EXTENSION SERVICES PERSONNEL: FINAL REPORT. Stanford, California: Institute for Communication Research, Stanford University, 1973.

Miles, M. B. "Innovation in Education: Some Generalizations" in M. B. Miles (ed.), INNOVATION IN EDUCATION. New York: Teachers College Press, 1964.

Miles, M. B. "Planned Change and Organizational Health: Figure and Ground" CHANGE PROCESSES IN THE PUBLIC SCHOOLS. Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration, 1965.

Schmuck, R. and Runkel, P. ORGANIZATIONAL TRAINING FOR A SCHOOL FACULTY. Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration, 1970.

Schmuck, R. A., Runkel, P. J., Saturn, S. L., Martell, R. T., and Derr, C. B. HANDBOOK OF ORGANIZATION DEVELOPMENT IN SCHOOLS. Palo Alto: National Press Books, 1972.

Sieber, S. D. "Organizational Influences on Innovative Roles" in T. L. Eidell and J. M. Kitchel (eds.), KNOWLEDGE PRODUCTION AND UTILIZATION IN EDUCATIONAL ADMINISTRATION. Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration, 1968.

Sieber, S. D., Louis, K. S. and Metzger, L. THE USE OF EDUCATIONAL KNOWLEDGE: EVALUATION OF THE PILOT STATE DISSEMINATION PROGRAM, FINAL REPORT. New York: Columbia University, Bureau of Applied Social Research, 1972.

Williamson, J. N. "The Inquiring School: A Model of Knowledge Utilization in a Self-Renewing Learning Environment." Paper presented at the annual meeting of the American Educational Research Association (AERA), Chicago, Illinois, April 5th, 1972.

Wolf, W., Jr. and Fiorino, A. J. A STUDY OF EDUCATIONAL KNOWLEDGE DIFFUSION AND UTILIZATION. Dayton, Ohio: Charles F. Kettering Foundation, 1971.

# LOCALS SAY INNOVATION IS LOCAL:
# A NATIONAL SURVEY OF SCHOOL SUPERINTENDENTS

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# LOCALS SAY INNOVATION IS LOCAL:
# A NATIONAL SURVEY OF SCHOOL SUPERINTENDENTS

The title of this symposium is "What Does Research Say About Getting Innovations Into Schools?" At first glance it is an innocent question, perhaps calling for a few straight forward answers, tables of data, some tests of significance and so forth. Indeed we have a number of such items, having recently completed a survey of innovation in 353 U.S. school districts. But a second longer look made me wonder if this question might be both confusing and provocative for many practitioners. The jarring phrase is "getting innovations into schools." What are innovations any how? Where do they come from? And whose business is it to "get them into" somebody else's school? I believe that there are actually three conceptions of "innovation" currently popular with different segments of the educational community and each conception carries with it a completely different vision of the process by which innovation does and should come about. Let us consider each in turn.

First there is the "innovation" which comes from research and development, a carefully evolved product or package or set of procedures, originally fashioned by experts, derived from the soundest psychological and pedagogic principles, transformed by creative educational engineers, curriculum writers and media specialists, and thoroughly field tested and redeveloped to assure that specified and worthy educational objectives are met. This is one kind of innovation. It is the kind of innovation which our regional labs and many of our educational R&D centers and private development corporations have been trying to create in the last decade.

Now consider a second conception of innovation, one that is rather simpler and perhaps closer to a traditional common sense definition of the word itself. An innovation is any practice or product which is new. It does not have to be better, although some may be, nor does it have to be based on R&D, although a few are. It can start anywhere and go anywhere. An innovation can be simple and trivial (hoola hoops) or fundamental (Darwinian theory), earth shaking (gun powder), or complex (systems analysis). Is such a conception meaningless? Not at all; in fact it is the definition used by most sociologists who have done research on the diffusion of innovations, probably because such academic researchers would rather not get tangled in value issues concerning the "goodness" of a change or its "importance."

But I think there is a third conception quite different in its implications from the first or the second. This is the notion people have of their own situation when they have done something new and it has helped them in some way they think is important. I think this is the prevailing view of innovation among practitioners and while it does not contradict the others, it has some special implications. For example, whether or not the change is based on R&D or on external evaluation, or on criterion-keyed objectives is mostly immaterial to most members of a school system. That it satisfies a need which they have felt is primary. It is also important that they have sought out this new thing and turned it to their own purpose, perhaps adapting something from somewhere else but always with the sense that they are innovators, fully involved in the process of creation.

I am not sure that a satisfactory and comprehensive view of innovation emerges from any one of these three conceptions, but there is an important aspect that emerges from each. From the first an image of what innovations ought to be in a universal sense, that is based on the soundest knowledge now available to mankind, fabricated by persons with the greatest expertise and specialized creative skill and validated by the soundest scientific methodologies. From the second conception comes the idea of movement, of transferability, and the importance of various channels of communication and of various barriers to sending and receiving such as discrepant social values and attitudes, language, and customs. From the third conception we are reminded that innovations must be seen as part of an on-going problem-solving process within social systems.

Four years ago we published a review of research and theory on the innovation process which explored these three conceptions in considerable detail.[1] We concluded from that study that a most satisfactory blending of all these ideas might be achieved by invoking the concept of a knowledge utilization chain which connects experts and resource persons at various levels with users at other levels. These connections are made through a continuing series of two-way interactions in which needs are defined and need-relevant solutions are fabricated. We proposed that a fully satisfactory innovative process could only be achieved when the user was fully involved in discovering his own needs and entering a dialogue with resource systems in which both sides participated in some degree in all stages of the problem-solving process.

After the literature review was completed we wanted to begin testing some of these ideas in various settings where innovation was presumably taking place. One such project was a questionnaire survey of school district superintendents across the U.S. We selected a probability sample of 500 stratified by district size and were able to gain the cooperation of 353 or 71% of those identified. They were asked to describe innovations which they had undertaken in the previous year and to tell us something about the process that was involved, who participated, what resources used, what barriers encountered and so forth. We also asked them to list for us innovations in all categories which had been undertaken the same year (1970-71). Here is the definition of innovation which we asked them to use:

> A major change introduced in the last year for the purpose of improving the quality of education within your district. This change may have involved any of the following:
>
> a. a substantial reorientation on the part of staff,
>
> b. a reallocation of resources,
>
> c. adoption of new practices, programs, or technology.

In our judgment most of the responses received would indeed fit these criteria from the point of view of an objective observer. For example, the largest single category of innovation was "individualized instruction and team teaching" (the two generally being reported together

as integral aspects of one innovation). Most educators will agree that changes of this sort are indeed fundamental, minimally requiring reorganization of role relationships, space utilization, grading practices, and curriculum elements. While it is true that innovations of a more trivial nature were numerous (e.g., adding a course here and there, and purchasing new equipment and materials) nearly every district could point to something significant they had done in the year. Minor innovations were also frequently cited as contributing to or components of a larger, more comprehensive, or more fundamental effort.

A grand total of 3,185 innovations were spontaneously cited in all categories, all purportedly meeting the criteria of "major" cited above. This represents an average of over nine innovations per district per year for schools representative of all regions and enrollment sizes throughout the United States. Even assuming zero innovativeness in the 147 non-responding districts out of the stratified probability sample of 500, this represents an absolute minimum rate of well over six innovations per district.

It is not my purpose here to go in any detail into the kind of innovations reported. This is presented fully in our report which is now available.[2] However, some impression of what we found may be given by Table 1 which compresses 35 tables into one and thereby over-simplifies a complex and massive set of findings. What we mean by "showcase" innovation in the second column is the more detailed description of a single innovation that was asked of each respondent.

TABLE 1

TYPES OF U.S. SCHOOL DISTRICT INNOVATION IN THE 1970-71 SCHOOL YEAR

| Innovation Category | Percent Chosen as "Showcase" Innovation (% of 346) | Percent of Total Innovation Effort (% of 3185) | Mean Number Per District |
|---|---|---|---|
| Individualized Instruction and Team Teaching | 29% | 16% | 1.5 |
| Administrative Innovations (includes R&D, Budget, School-Community Relations, Staffing and Staff Training) | 21% | 28% | 2.6 |
| Programmatic Approaches to Instruction (includes special programs for special groups, disadvantaged, tutoring, aides, paraprofessionals) | 19% | 12% | 1.1 |
| Curriculum Change | 16% | 21% | 2.0 |
| Organizational Innovations (includes grade levels, scheduling, attendance units, alternative schools) | 12% | 8% | 0.7 |
| Instructional Technology and Facilities | 5% | 15% | 1.4 |

"Total innovation effort" in the third column is simply an addition of all innovations listed by all respondents. In the fourth column, we have divided the total number of innovations reported in each category so that our calculations are somewhat misleading. Nevertheless, our findings suggest a continuous ferment of change in almost all U.S. school

districts. On the face of it, many of these changes are profound, not trivial. They are complicated, involve many participants, require many types of skills, and presumably all sorts of expert resources. This seems to run counter to the idea that many have of the U.S. educational "establishment" as frozen in its ways, indifferent to change and unresponsive to the needs of students. If such imagery is as pervasive as I feel it is, then somebody should be doing something to contradict it because: (a) it isn't so, and (b) it does injury to professional educators by demoralizing and lowering public esteem and confidence.

The principal objective of this survey, however, was not to enumerate innovations, as such, but to obtain an empirical understanding of typical *processes* of innovation at the local level in U.S. public education. To this end, both closed- and open-ended questions were asked concerning participation, resources utilized, procedures followed, and barriers encountered. We also sought to determine the influence of various contextual and situational variables on over-all innovativeness.

It is these findings which I think may shed the most light on this question of divergent perspectives which I raised at the outset. One finding seems to stand out above all others regarding the innovation process: *participation and involvement* by various persons and roles are seen as the key factor in innovation success. Table 2 tells the story.

Looking first at the right hand side of the table, we see that in representative districts teachers were most frequently involved in some way in the innovation process (67%), assistant superintendents (53%), principals (49%) and staff (exact positions unspecified by respondent - 46%) were all involved in about half the showcase innovations. Super-

TABLE 2

PARTICIPANTS IN THE SHOWCASE INNOVATION

| Participant | Participation Cited as Key Factor | | | | Total Participating or Informed | | | |
|---|---|---|---|---|---|---|---|---|
| | Districts < 80,000 Freq. | % of 315* | Districts ≥ 80,000 Freq. | % of 31* | Districts < 80,000 Freq. | % of 315* | Districts ≥ 80,000 Freq. | % of 31* |
| Teachers | (120) | 38 | (11) | 36 | (211) | 67 | (17) | 55 |
| Staff (Unspecified) | ( 85) | 27 | (13) | 42 | (143) | 46 | (15) | 48 |
| Community | ( 51) | 16 | (12) | 39 | ( 76) | 24 | (15) | 48 |
| Students | ( 46) | 14 | ( 2) | 6 | ( 73) | 23 | ( 4) | 13 |
| Administrators (Unspec.) | ( 34) | 11 | ( 7) | 23 | ( 82) | 26 | (10) | 31 |
| Principals | ( 32) | 10 | ( 3) | 10 | (154) | 49 | ( 8) | 26 |
| Parents | ( 32) | 10 | ( 3) | 10 | ( 62) | 19 | ( 5) | 16 |
| School Board | ( 20) | 6 | ( 5) | 16 | ( 70) | 22 | (10) | 31 |
| Asst. Superintendent | ( 13) | 4 | ( 8) | 26 | (167) | 53 | (28) | 91 |
| Supervisors/Specialists | ( 9) | 3 | ( 2) | 6 | ( 89) | 28 | (13) | 42 |
| Superintendents | ( 6) | 2 | - | - | (121) | 38 | (14) | 45 |
| Counselors, Psychologists | ( 6) | 2 | ( 1) | 3 | ( 40) | 12 | ( 1) | 3 |
| Teacher Aides | ( 6) | 2 | ( 3) | 10 | ( 30) | 9 | ( 7) | 23 |
| Outsiders (Unspec.) | ( 6) | 2 | ( 1) | 3 | ( 30) | 9 | ( 3) | 10 |
| Universities | ( 5) | 2 | ( 1) | 3 | ( 28) | 9 | ( 1) | 3 |
| State Educ. Agencies | ( 5) | 2 | - | - | ( 23) | 7 | ( 1) | 3 |
| Parent-Teacher Assoc. | ( 2) | 1 | - | - | ( 10) | 3 | ( 1) | 3 |
| Teachers Association | ( 2) | 1 | - | - | ( 8) | 2 | ( 1) | 3 |
| Total School (Unspec.) | ( 2) | 1 | - | - | ( 4) | 1 | ( 1) | 3 |
| Regional Educ. Labs | ( 1) | ** | - | - | ( 2) | 1 | ( 1) | 3 |
| Private Companies | - | - | - | - | ( 6) | 2 | ( 2) | 6 |

*Respondents could name more than one participant; therefore, total percents are greater than 100.

**Less than 0.5%.

intendents, at 38%, are the group which ranks next, and further down the list are the supervisors and specialists (28%) and administrators in general (exact positions not specified - 26%). For these districts, then, it is clear that the school staff as a whole was deeply involved in the innovation process. Participating less often, though still to a healthy extent, were the community (24%), students (23%), the school board (22%) and parents (19%). Counselors (12%), and teachers' aides (9%) had a low degree of participation; and finally, parent-teacher associations and professional associations were listed, along with all outside groups, as participating in less than 10% of the showcase innovations.

In very large districts the pattern of total participation differs somewhat. Most outstanding is the fact that assistant superintendents lead the list, with participation in 91% of cases. Teachers (55%) and principals (26%) participate somewhat less than in the representative districts, while superintendents (45%) and supervisors (42%) participate to a somewhat greater degree. Community members also play a more extensive role in the very large districts, participating in 48% of all showcase innovations. Students, on the other hand, are involved slightly less often (13%). Again we find that outside groups play a role in 10% or less of cases.

Data on the left hand side of the table summarizes responses, relevant to participants, to the question: "What seemed to be the key factor in making the adoption and acceptance of this innovation successful or unsuccessful?" In almost all cases participation was cited as a key factor in success. In fourteen cases, however, lack of involvement or

negative involvement of specific groups was noted as being a key factor interfering with effective adoption. In six of these cases (one in a very large district) the community was named as a key negative factor; students and teachers were named in two cases each, and administrators, parents, the school board and the Teachers' Association were each named in one case.

Looking now at the first column of Table 2, we see that in representative districts teachers and staff head the list of key participants, but community members, students and parents seem to have special importance, especially in proportion to their total citations. The role of administrators, on the other hand, is considerably less salient. All outside sources are again abysmally low.

Participation as a key factor forms a similar pattern in the very large districts, but with assistant superintendents more important and community involvement of very great importance. Students, however, are rarely cited as a key factor in innovation.

What is especially noteworthy in Table 2 is the almost total absence of mentions of outside resource groups. Universities are spontaneously mentioned in only 29 out of the 346 cases in which showcase innovations were reported, and they are seen as a key factor in only six cases. State agencies fare even worse, while Regional Educational Laboratories and private companies are out of sight.

We feel that these findings are among the most significant to emerge from our survey, for while they probably underestimate actual utilization of outside resources, they suggest something about the very low visibility

of the external resource universe as far as the overwhelming majority of U.S. school districts are concerned.

The last page of the form contained a list of resources which might be used in promoting, adopting, or implementing innovations; the list was divided into two halves, one representing "internal resources" and one representing "external," and were labelled as such. Respondents were asked first to indicate over-all extent of use in the school district and then to indicate whether or not the resource was used in the showcase innovation specifically. Responses generally confirm the pattern emerging from the participation data summarized above. Teacher discussions and teacher in-service training were rated as used "frequently" or "very frequently" by almost all respondents and were mentioned as used in the showcase innovation 48% and 44% of cases respectively. Table 3 provides an overview of these data divided into representative districts under 80,000 in enrollment and all districts 80,000 and larger.

TABLE 3

RESOURCE UTILIZATION AND SCHOOL DISTRICT INNOVATION 1970-71

| RESOURCES INSIDE THE LOCAL SCHOOL DISTRICT | Frequency of This Resource Cited as Used in Major Innovation Described: Districts under 80,000 pupils % of 315 | Districts under 80,000 pupils Freq. | Districts with 80,000 or more % of 31 | Districts with 80,000 or more Freq. |
|---|---|---|---|---|
| Teacher Discussions and Idea Presentations | 47 | (149) | 55 | (17) |
| In-Service Training Program | 43 | (135) | 61 | (19) |
| Curriculum Supervisors | 32 | (100) | 61 | (19) |
| Research & Evaluation Office or Staff | 32 | (96) | 61 | (19) |
| Library Facilities | 21 | (66) | 39 | (12) |
| Student Discussions & Idea Presentations | 20 | (63) | 32 | (10) |
| Media Specialists or Centers | 19 | (60) | 42 | (13) |
| Other | 4 | (13) | 13 | (4) |
| **RESOURCES ORIGINATING OUTSIDE THE SCHOOL SYSTEM** | | | | |
| State Education Agency Services | 30 | (94) | 35 | (11) |
| Universities and Colleges | 26 | (82) | 45 | (14) |
| ESEA Title I Projects or Services | 17 | (54) | 26 | (8) |
| ESEA Title III Projects or Services | 13 | (41) | 13 | (4) |
| Professional Associations | 10 | (33) | 26 | (8) |
| Fed. Funded Prog. & Serv. Other than those specified | 10 | (31) | 23 | (7) |
| Educational Resources Information Center (ERIC) | 9 | (28) | 23 | (7) |
| Foundations and Other Private Programs | 6 | (19) | 13 | (4) |
| USOE Supported Regional Educational Laboratories | 5 | (15) | 19 | (6) |
| Other | 6 | (20) | 13 | (4) |
| At Least One Federal Source | 35 | (110) | 42 | (13) |
| Two or More Federal Sources | 9 | (29) | 32 | (10) |

Once again internal resources generally received more usage than external resources, although differences were less pronounced than in the spontaneously reported data.

Because of the nature of this project, several of the "external resource" items referred to specific programs of the federal government. We found that 35% of districts in the representative sample used at least one federal resource, usually, we inferred, as a source of financial support (e.g., Title I and Title III of ESEA cited for 18% and 13% of showcase innovations respectively). Federal information resources represented by ERIC and the Regional Laboratories were far less utilized. ERIC was used by 9% of the 315 representative districts while the REL's were used by 5%. Among the very large districts, however, reported use was higher (23% for ERIC, 19% for REL's).

"What does this research say about getting innovations into schools?" This bit of research seems to be saying that schools are mostly getting innovation into themselves without too much regard to outsiders. It says that innovation involves a great deal of participation by many different persons and groups, some administrators, some specialists, most teachers, and few students. The outside R&D experts and their wares are barely visible.

Another set of findings provides a better grasp of the divergent philosophies and strategies of various superintendents. After describing their major innovation, they were asked to rate 21 "procedure" statements on a five point scale from "extreme emphasis given" (5 points) to "no emphasis given" (1 point). Each of these 21 items had been

selected intentionally to represent major tenets of differing change strategies advocated in the literature (as summarized in Havelock, 1969, Chapter II). It was predicted that various superintendents would show patterns of response corresponding to three major "perspectives" on change identified by Havelock as "problem solving," "social interaction," and "RD&D."

The highest rated items in order of mean ratings were "persistence by those who advocate the innovation" (4.17), "systematic planning" (4.12), "providing a climate conducive to sharing ideas" (4.11), "selecting a competent staff to implement change" (4.04), "creating awareness of the need for change" (4.03), "adequate definition of objectives" (4.00), and "adequate diagnosis of the real educational need" (3.98). Among the 31 very largest districts the pattern was generally very similar but "planning" (4.30), "competent staff" (4.30), "definition of objectives" (4.27), and "diagnosis of needs" (4.23) were all rated higher.

At the low end of the rating, distinctly below the 19 other items, were "taking advantage of crisis situations" (2.59), and "participation by key community leaders" (2.84). Very large districts again believed that community leader participation was more important, however (3.13).

Through a principle component factor analysis subjected to a varimax rotation, empirical clusters of items emerged corresponding reasonably close to predictions. The strongest such factor, labelled as "participative problem solving" was clearly represented by four items:

Maximizing chances of participation by many groups.

Finding shared values as a basis for working.

Providing a climate conducive to sharing ideas.

Stressing self-help by the users of the innovation.

A second factor was clearly related to the RD&D philosophy. Key items in this cluster were:

Systematic evaluation.

Solid research base.

Systematic planning.

Adequate definition of objectives.

A third factor, somewhat related to the predicted "social interaction" perspective, we preferred to label "strategic manipulation." It centered on the item "participation by key community leaders" but also included "taking advantage of crisis situations" and "involvement of informal leaders of opinion inside the schools." This factor was also somewhat related to the suspicion that outside resource groups were unwilling to help revise or adapt innovations.

A fourth procedure factor, not predicted, appeared to represent a kind of new politics or "greening of America" view of change which we labelled "open advocacy and human revolution." Items in this cluster were as follows:

Confrontation of differences.

Resolution of interpersonal conflicts.

Creating awareness of the need for change.

Creating an awareness of alternative solutions.

Providing a climate conducive to risk-taking.

On the whole the findings confirmed predictions and at the same time added something to our understanding of different change philosophies.

Some of our most provocative findings came from correlational analysis between "innovativeness" and 82 other variables generated from the questionnaire. The "innovativeness" measure was a crude one comprised of a simple count of the total number of innovations mentioned by the respondent in all categories, but the results are nevertheless worthy of speculative interest. Table 4 provides a summary.

Past studies by various authors have found relationships between innovativeness and a number of standard descriptive measures of school districts. Table 4 suggests the relative importance of a variety of factors including these traditional measures and a number of items related to the concepts of innovation process summarized in other parts of this paper.

Starting at the top of this table, there appear to be five characteristics of school districts associated with innovativeness in addition to and independent of district size. Per pupil expenditure is a traditional and expected correlate, suggesting not only affluence but consistent local support for education over the years. Media centers and in-service training are inside resources which also spur innovation. Lay advisory groups represent another important type of linkage which innovative districts are slightly more likely to employ. It is interesting to

TABLE 4

NOTABLE CORRELATES AND NON-CORRELATES OF INNOVATIVENESS IN A NATIONAL SAMPLE OF 353 SCHOOL DISTRICTS: 1970-71

| VARIABLE | CORRELATIONS WITH INNOVATIVENESS SCORES OF EACH DISTRICT: Zero Order r | Zero Order sig.lev. | District Size Controlled r | District Size Controlled sig. | |
|---|---|---|---|---|---|
| Number of pupils (size) | .27 | (.001) | - | - | Correlates Independent of Size |
| Per pupil expenditure | .14 | (.02) | .18 | (.01) | |
| Utilize media specialists & centers | .20 | (.001) | .17 | (.01) | |
| Utilize in-service training | .25 | (.001) | .13 | (.02) | |
| Utilize lay advisory groups (community, minority, parents) | .19 | (.001) | .12 | (.05) | |
| Teacher strikes (frequency) | .12 | (.05) | .11 | (.05) | |
| Community group protests (freq.) | .17 | (.005) | .05 | NS | Correlates apparently not independent of size |
| Student unrest (protests, confrontations, etc.) | .13 | (.05) | -.03 | NS | |
| Use local TV to explain innovations | .16 | (.005) | -.01 | NS | |
| Use local newspaper to explain innovations | .15 | (.01) | .08 | NS | |
| Percent of 1970 graduates going on to 4-year college | .08 | NS | .09 | NS | Apparently not correlates of Innovativeness |
| Difficulty in gaining citizen support for financing in the last year for: | | | | | |
| a. existing operations | .01 | NS | .04 | NS | |
| b. new projects | .03 | NS | .01 | NS | |
| Pupil-teacher ratio | .00 | NS | -.10 | NS | |
| PROCEDURES EMPHASIZED IN IMPLEMENTING THE MAJOR 1970-71 INNOVATION | | | | | |
| Resolution of interpersonal conflicts (P IV) | .21 | (.001) | .19 | (.01) | Procedures generally stressed in problem-solving and linkage Perspectives toward innovation |
| Creating awareness of the need for change (P IV) | .21 | (.001) | .18 | (.01) | |
| Maximizing chances of participation by many groups (P I) | .17 | (.005) | .16 | (.01) | |
| Stressing self-help by the users of the innovation (P I) | .16 | (.005) | .15 | (.01) | |
| Providing a climate conducive to risk-taking (P IV) | .16 | (.005) | .13 | (.01) | |
| Providing a climate conducive to sharing ideas (P I) | .15 | (.005) | .10 | NS | |
| Systematic evaluation (P II) | -.07 | NS | -.13 | (.05) | Procedures stressed in R,D,D&E. Perspective on innovation. |
| Systematic planning (P II) | .07 | NS | .04 | NS | |
| Adequate definition of objectives (P III) | .04 | NS | -.03 | NS | |
| Solid research base (P II) | .07 | NS | .06 | NS | |

contrast this interactive type of community linkage with the use of TV and newspapers which are also correlated, although their use seems to be a function of district size.

Many authors have suggested that crises may be conducive to an unfreezing of traditional school patterns and hence to innovativeness. It appears that teacher, community, and student-provoked crises are related to innovativeness. Again, however, only teacher strikes survive as a weak but significant correlate when size of district is controlled.

The third set of variables in Table 4 are included here because their lack of relationship to innovativeness may be of surprise to some readers. Neither the intellectual distinction of graduates nor reputed troubles with school finance appear to have much to do with number of innovations reported.

Several items from our "procedures" list were also significantly correlated with innovativeness. Strongest among these were "resolution of interpersonal conflicts" ($r=.21$, $p < .001$), "creating awareness of the need for change ($r=.21$, $p < .001$), and "maximizing chances of participation by many groups" ($r=.17$, $p < .005$). None of these items was greatly affected by controlling of size. Generally the items which were positively correlated with innovativeness belonged to the two factor clusters "participative problem solving" and "open advocacy-human revolution."

There was essentially a zero relationship between the RD&D items and innovativeness. In fact, emphasis on evaluation seemed to have a slight negative relationship, suggesting, perhaps, that too much emphasis

on evaluation dampens the innovative spirit. It may, of course, also portend a greater concern for innovation quality than quantity.

We are very concerned not to exaggerate the importance of these correlations. The measure of "innovativeness" in particular is flawed as a criterion measure because it rewards sheer numbers and verbosity without regard to either quality or genuine numerical equivalence of measurement units. Nevertheless, it does seem desirable to continue searching for and trying out various sorts of outcome or criterion measures to help us evaluate the relative importance of procedures, barriers, resources, and all other purportedly "important" variables in the innovation process.

## CONCLUSIONS

### 1. We Need to Focus on Quality Without Reducing Quantity

There appear to be enough forces at work on U.S. education to act as a stimulus for change, but a will to act is not enough if one knows not how to act wisely. The lack of attention to external expert resources and to the experience of other school districts suggests that each district is out to reinvent many wheels. The consequences of a go-it-alone strategy of innovation are sometimes good in terms of enthusiasm and intensity of local involvement, but the costs are overwhelming. Mistakes are made over and over again; large sums are spent in creating essentially parallel and duplicate materials, and certain cost-saving and benefit-increasing options are not considered because no one is aware that they exist.

Careful evaluation, by itself, will not do much to improve quality and may discourage innovativeness. It is more important that districts bring in and adapt innovations which have been carefully evaluated in other settings than that they expend limited internal resources on exhaustive evaluations.

2. There is a Tremendous Fund of Experience with Innovation Going to Waste

Every year there are at least 20,000 and probably more like 100,000 innovation efforts begun in U.S. school districts. Many will be successful; many will also fail and be terminated; but the experience gained in one place in 1972 should be made available to someone contemplating a similar activity in another place in 1974. True, every district is unique in some respects, but in most respects, most districts are not unique; they have direct counterparts in other states and regions and even in their immediate vicinity, and these counterparts will be trying out similar or identical innovations. Up to now we have had no satisfactory way of codifying and banking such experiences so that they can be drawn upon by others, and no retrieval system exists to make such banks highly utilized.

Yet the experience of local innovation efforts in the U.S. is so vast that it dwarfs even the largest federal programs (e.g., ESEA, Title III).

3. There is a Crying Need for Improved Extension Services to Inform and Assist Local Innovators

The existing information networks external to schools seem to have very low saliency for innovation managers within school systems, yet there is no apparent reluctance to bend an ear to outsiders or to receive their help. The prime barriers perceived by innovators center around informational issues, e.g., "confusion about the purpose of the innovation" and "lack of precise information about the innovation." The implication is that schools are ready and waiting for effective extension services (perhaps analagous to the Cooperative Extension Service in Agriculture but probably with a good deal less resistance to cope with).

4. Local Innovators Can Make Very Good Use of Skills in Problem-Solving and Communicating

"Participation" is the most important key to success in innovation, according to our respondents; this means participation by teachers, community, and students, Yet providing effectively for such participation in a genuine collaborative sense requires great skill in human relations and group management. We found human relations training programs of one sort or another mentioned in a little less than half the districts, but the need for quality programs in this area is apparent. Respondents also indicated that they would find guidance on innovation process helpful in their own future planning and action.

5. We Need Better Studies of Innovation Process

Having drawn so many conclusions from a rather thin set of facts based on a questionnaire survey, I will now try to conclude in a more humble tone. This study was inadequate in a number of respects, most

I think stemming from the methodological limitations of a mailed questionnaire. Most important of the problems still facing us is the lack of a solid dependent variable which makes sense to researchers, practitioners, and policy makers as a manifest "benefit." An improved measure of "innovativeness" is one aspect of this.

Future research efforts should also make more satisfactory probes for negative cases. There was an apparent reluctance on the part of our respondents to own up to negative consequences and innovations that ran awry. We tried to get reports specifically on "unsuccessful" or "problematic" innovations in our pilot work but drew a blank. A creative way should be found to surmount this problem.

Future studies should also begin to probe the infrastructure of the educational change network between the local district and the national government, including activities by universities, state agencies, and sundry private sector groups. Their near-invisibility in this study remains a mystery to us.

Finally, studies should begin to probe in more depth organizationally and temporally within the district. Principals, teachers and other key figures within the district should be sampled using equivalent or identical items for comparison.

## REFERENCES

Havelock, Ronald G., et. al. PLANNING FOR INNOVATION THROUGH DISSEMINATION AND UTILIZATION OF KNOWLEDGE, Ann Arbor, Michigan: Institute for Social Research, Center for Research on Utilization of Scientific Knowledge, University of Michigan, July 1969 (Second Printing, 1971).

Havelock, Ronald G. and Havelock, Mary C. with Markowitz, Elizabeth. EDUCATIONAL INNOVATION IN THE UNITED STATES, Volume I The National Survey: The Substance and the Process. Part of the Final Report to the U. S. Office of Education, Contract #OEG-0-70-4296 (508) June, 1973.

# WHAT WE CAN LEARN ABOUT CHANGE PROCESSES FROM ESEA TITLE III

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WHAT WE CAN LEARN ABOUT CHANGE PROCESSES FROM ESEA TITLE III

The history of Title III of the Elementary and Secondary ACT of 1965, known as PACE (Projects to Advance Creativity in Education), is destined to become an important chapter in the history of American education, and it is particularly relevant to a conference that focuses upon the processes of change. The goal of the "mad money" title was to improve the quality of education by encouraging, in the most productive ways possible, the widespread adoption of constructive new ideas and practices in education. Title III was born of the conviction that if our schools did not change -- if they did not seem capable of coming up with adequate, let alone imaginative, ways of meeting needs of the Nation's young -- it was not because our schools and communities were empty of creative ideas and individuals. The problem was that schools, and school systems, needed a stimulant to seek out new ideas, to risk the failure, the controversy, the difficulty that accompanies the new and different, the untried and untested. Members of the original task force that established ESEA Title III, chaired by John Gardner, believed that significant educational changes would not come about unless the Federal government exercised leadership in encouraging and disseminating innovative ideas in the nation's classrooms.

My work with the Title started early, as Director of the first two national evaluations of PACE, with considerable assistance from many individuals and many dollars in this "greening of education" era. Following these two studies, I served as Executive Secretary of the newly-formed President's National Advisory Council on this Title. This Presidential Advisory Council nad one uniqueness: it was the only one located outside of the nation's Capitol. I found the gentle ways of life at the University of Kentucky provided a sanity-insurance that was not available to those

who remained wholly in the Potomic cauldron during this exciting period. The late President Johnson was right when he said, "The mid-60's will be remembered as a time of unprecedented achievement in American education." One cannot be intimately involved in the most extensive and intensive thrust toward innovation and change undertaken by any nation without developing some observations and conclusions related to it. The remainder of this paper will present what I have distilled from my ESEA Title III experiences.

## Two Research Studies

First, I would like to discuss briefly two research studies related to PACE and the change process. The most extensive study to date was completed by Norman Hearn. I will draw generously from his report made at the 1970 American Educational Research Association's Convention. The profile of a PACE project that was continued by local educational agencies after Federal funding ended -- and 85 percent were continued in some form -- is one that served larger numbers of pupils, had a larger budget, cost less per child, could be introduced without disturbing the ongoing educational system too much, had smaller budgets for evaluation and dissemination, included more student and school board involvement, and had higher visibility in the system. While continued projects had larger overall budgets than discontinued ones, those discontinued had significantly larger budgets for training or retraining of teachers, evaluation, and dissemination. The termination of high-cost training projects is explained partially by the fact that projects which retrained teachers and staff were not likely to be continued because the training was

completed. The termination of projects with costly evaluation components may be because projects emphasizing evaluation were too technical and complex for local administrators to understand or such evaluations produced results which indicated that the program was not significantly better than the established approaches.

Profiles of communities most likely to adopt Title III projects were those with higher per-pupil expenditure, higher percentage of students continuing on to college, and higher family income. They also were more likely to recruit their superintendents from outside the system, and were considered by their superintendents to be more open-minded and supportive of new ideas. Superintendents of continued projects, as compared with those of terminated ones, were likely to have an earned doctorate degree, have been born in a rural area, moved more often, attended more out-of-state meetings, and, though younger, had more experience as a superintendent. (Hearn 1970)

A study by Ralph Kimbrough and associates (Kimbrough et al. 1973) analyzed conditions and factors that accounted for success and failure of the Supplementary Education Centers in Florida. Detailed case studies analyzed and compared the one surviving center with one of the five terminated ones. Many differences were noted: A tradition of cooperation among the members of the regional center was evident in the case of the surviving center but lacking in the case of the terminated one. The authors concluded that if a tradition of cooperation did not exist, ways should be found to compensate for it before initiating a center. One of

the most evident differences between the two centers was in the way they related to the local power structures. The successful center displayed much greater political astuteness in working with the local leaders, and therefore greater effectiveness in having programs introduced and accepted, and, in addition to political astuteness, the successful center demonstrated a higher responsiveness to maintaining credibility with leaders of cooperating school systems.

## Model Building

Many models for change have been developed, and I do not propose to analyze any one of them in detail; rather, I would like to take a macrocosmic view of model building and relate certain aspects of this perspective to Title III. Four orientations for change models will be discussed.

The human relations model was born, nurtured, and remains the property of psychologists. The model is introspective, based upon the premise that to change others, one must first understand and change himself or herself. Sensitivity sessions are the latest manifestation of what began on a large scale with the National Training Laboratories at Bethel, Maine shortly after the Second World War, although the movement goes back earlier.

A number of PACE projects focused on bringing about change through the human relations model, and increased sensitivities on part of many participant teachers and administrators have improved teaching and

learning. In other Title III projects, however, success of this approach ranged from average and downward. While many reasons can be given, I believe that three were paramount: (1) Some using a human relations model were not much beyond the undergraduate level of competency in handling the complex and sensitive processes of this approach. I can remember various conversations with individuals conducting these programs: sincere, intelligent, diligent, and gaining valuable experience -- sometimes at the expense of others, through a pragmatic trial-and-error approach that sometimes worked and sometimes did not, and sometimes caused problems that more education and experience could have avoided; (2) Its advocates were usually young, recently schooled and talked differently from those in power, thus a confidence gap developed; (3) This introspective approach tends to ignore, or at least considers too lightly, external factors that indeed may be the critical ones. Federal, state, and local sociological or political factors may be the determining ones in bringing about progress through change, or preventing it. The human relations model is useful in developing human understanding, but it needs to be tempered with rational and irrational reality factors.

The systems model of change is an external model, and its basic tenet is that change comes about through more effective use of human and material resources. The basic systems model has four components: what are the objectives sought, what means should be used to make progress toward these objectives, what human and material resources are needed, and what types of evaluation should be used to judge progress toward the objectives?

PACE projects have made a significant contribution to the develop-

ment and application of the systems approach to education. Results of PACE projects focusing on systems models can be found in many school systems throughout the nation. Evaluation, as an integral part of the systems model, was given a significant boost by ESEA Title III, and much of the current attention to evaluation can be traced to PACE projects as well as the work of the national evaluation studies of the Title.

The systems approach is basically quantitative, and this dimension is needed, but it should be a means to a qualitative end -- which is better teaching and learning. What Dr. Harold Enarson, President of The Ohio State University, recently said about universities applies equally to the elementary and secondary levels: The University "...is not 'just another organization.' It is a very special kind of place. It is more like the Metropolitan Opera than the Metropolitan Life Insurance Company. It is more like a church than a factory, more like a research lab than the highway department. The university is an intensely human enterprise."

The sociological change model is concerned with the external factors that influence schooling. These include the neighborhood, nature of the student body, type of educational facility, and so forth. One of its early proponents was John Dewey. In his influential work at the turn of the century entitled, School and Society, he said that education should be based upon three basic components: the society, the school, and the child. He defined education as a process that helps one avoid being victimized by his environment.

Busing to achieve racial equality, and works by Havighurst, Coleman, Jencks and others indicate the contemporary interest in sociological

aspects of change. Title III was not active in exploring or developing sociological change models.

The political change model has some kinship to the sociological one, but it has some distinctions also. The political change model emphasizes understanding organizational and bureaucratic structures more than the others, and it differs fundamentally from the human relations model in that it accepts conflict as normal. The political change model includes one tenet that is difficult for educators to accept; namely, that important educational policy decisions are based more on political than educational considerations.

Undergraduate preparation has done little to assist teachers in understanding the political process in educational change. The demise of ESEA Title III, for example, is the result of political decisions. The title was very successful from the educational point of view, but it was a Democratically conceived program. The new Republican administration in 1968 needed to establish its own place in the educational world, and many of the most successful programs developed during the Johnson Administration were consolidated or eliminated.

Personnel directing Title III projects suffered from political naivete as perhaps their greatest shortcoming. In hindsight, I suffered this naivete also and in the national studies and in the monthly periodical called PACE report, I did not give political factors their proper measure of importance. Title III did very little in developing political sophistication among teachers and administrators except through the school of hard knocks. Collective bargaining and the failure of many school bond issues have, however, developed political savy among teachers

and administrators in a short period of time.

The artistry of change requires a careful and sophisticated analysis of what change model or approach might best achieve the ends sought. A consultant can assist in clarifying alternatives and raising questions, but the change model that is chosen or developed needs a firm rooting in the indigenous terrain. This seemingly obvious thing to do often has been overlooked or given passing attention by those who want to move ahead rapidly and who may have acquired the language of change but not the feel for where, how and when change can take place most effectively. Title III has taught us the importance of "knowing the territory," which was also emphasized in The Music Man, and the territory includes understanding the realpolitik before programs are undertaken.

A final note on change models contradicts some things said thusfar: It is that ignorance can be a great innovator! If we knew before we started an enterprise all of the problems we would encounter, many successful undertakings that we initiated in blissful and enthusiastic ignorance never would have been started. (I developed this point many years ago after completing a trip around-the-world by motorcycle!) We cannot expect to know or anticipate all future reactions and ramifications of our innovative interests and programs, and we will do nothing if we wait until all the facts are in. Do the best you can in planning and anticipating the future, using sage advice as well as computers, then move ahead.

## Some Implications for Practice

In this final section, I want to offer some additional observations

that relate to what I learned from Title III. Beyond what I say here, I am convinced that ESEA Title has changed the lives of thousands of individuals who worked to improve education through innovation and experimentation.

Analyze the climate for change. A study of the flow and ebb of many Title III projects has reinforced the validity of a cyclical theory of change. The theoretical basis for this view may be found in the works of the nineteenth century German philosopher, Hegel: Thinking proceeds in a dialectical fashion. It begins by laying down a positive thesis which is at once negated by its antithesis, then further thought produces the synthesis. But this, in turn, generates an antithesis and the same process continues once more. Hegel believed that this process of thinking was driven by two inseparable elements: the positive aspect of growth, the emergence of something new; and the negative aspect of rejection, the discarding of the old. The presence of this element of negativity within thinking itself is, in Hegel's view, the clue to all kinds of development.

We see the Hegelian logic at work in rejection of political leaders by voters for no apparent reason other than a change is needed; we see it in search committees for college and university presidents, where an incoming office holder often is quite different in philosophy and style from the outgoing one; and we see it in the selection process for large corporate executives. In the case of Title III, we see communities moving ahead with great vigor and purpose, usually the result of leadership by the superintendent; then encountering some internal and external

resistance, which has a way of building up rather than dissipating: the superintendent leaving, either voluntarily or otherwise; and a successor named who is much more circumspect and conservative about innovation. A cyclical pattern of human development would not have a community always receptive to a high level of innovation and experimentation. Those who subscribe to a cyclical theory would expect "motivational exhaustion," to borrow a term from C.I.A. lexicon, to be reflected in the ongoing life of a school system. The throttle can be held open only for a period of time, and army field commanders know that troops can move ahead only so far and so fast, then consolidation, rest, and resupply are necessary.

A second dimension of the climate is the larger societal picture. Ten years ago, for example, educators were viewing with alarm the fact that 25 percent of the bond issues were being defeated by the voters. Today, 25 percent are being passed! The watchword is economy and cost-saving, and accountability has replaced innovation as the watchword for educators and the battle cry for school board members. Innovative administrators must consider the delicate problem of making necessary budget cuts while developing some new programs and improving ongoing ones. More than ever before, wise readings of community groups and pressures as well as those within the school system are necessary for effective change.

Expect opposition. Title III experience was dubbed by someone as the rocky road to innovation, and the lessons of this bumpy road have not been communicated very well. Ralph Huitt, former Assistant Secretary for Legislative of the United States Department of Health, Education, and Welfare, summarized his experience with the legislative process in this

way: "Keep your promises, work with your friends, talk to the people in the middle, and leave your enemies alone." (Huitt 1969).

It is common knowledge that opposition to innovations can be expected, but effective approaches to neutralize or turn-around the opposition are not so clear. I believe we can learn much from Title III on this score, and the basic lesson is found in Ralph Huitt's summary, with one difference. Enemies in the world of professional education are somewhat different from those found in the legislative area where vested interests are more clearcut and the stakes are higher. Sincere, informed, and frank approaches to members of the opposition have turned them around in some instances, but this charitable approach needs to be used eclectically and carefully. Where forces of opposition seem immovable and when there are explainable reasons for intrangience, time is better spent working with the wobblers and those who are uninformed. The important point to be made here is that the nature and strength of the opposition should be considered in detail. We have not done enough of this kind of analysis in Title III programs.

Use low profile. Many Title III projects have had too much publicity, too fast, and before results were anything other than words. Some errors resulted from over-enthusiasm, inexperience in public relations and working with those in the mass media, and lack of detailed knowledge and experience in the implementation of ideas.

A low profile should not be confused with bona fide visibility, which can grow out of a low-key beginning, and it is possible and desirable to have high visibility and still maintain a low profile. High visibility comes about through efforts of many who disseminate the word, and through hard work and credibility on part of project leaders. Good things in education have a way of disseminating themselves, and this kind of visibility is what endures and succeeds.

Simplify and communicate. Many Title III projects have failed because of excessive complexity and comprehensiveness. Five of the six comprehensive supplementary centers in the State of Florida were not continued when the initial three-year grant was terminated. The relatively specific and simple projects are more easily understood, managed, and results more readily identifiable. The success of an innovation seems to be inversely proportional to its complexity.

It is important to remember, however, that simple projects do not necessarily represent what is needed to improve schooling. In other words, what "is" is not necessarily what "should be." The Alternative School Movement and Individually Prescribed Instruction (IPI) are not simple, yet they provide commendable approaches to teaching and learning. The experience of PACE vis-a-vis size and complexity of projects should not be lost, and every effort should be made to simplify -- to have translators and communicators interpret the program so it is comprehensible to various target audiences. A few years ago this problem became particularly apparent to me in organizing an international seminar on Frontiers of Learning where world-renowned psychologists, neuro-physiologists,

cybernetics, and learning authorities discussed their findings. It was necessary to have two intermediary levels to simplify and clarify what was being said.

Speaking of simplification, as I review what I have written, some of it seems oversimplified and some observations seem so commonplace as to beg the thought: Cannot one gain more insight from an analysis of so many projects dedicated to innovation and change? After all, more than 5,000 Title III projects costing more than one billion dollars have been funded over the past eight years. Yet, upon reflection, in simplicity and clarity lie the keys to communication and effective action. The basic ingredients of change really boil down to effective individuals, a good product and plan, favorable conditions and timing, and a dash of luck. And in the final analysis, the conclusion reached in this Forbes Magazine study pinpoints the matter: "The clear lesson of fifty action-packed years of U.S. business history is this: If a company has nothing going for it except one thing -- good management -- it will make the grade. If it has everything except good management, it will flop." (Forbes Magazine 1968).

Risk taking and hope. Title III has personified a much needed risking and daring element in education, and as such it has captured the energies and imaginations of the most creative and brilliant element in our profession. Such individuals do make errors -- and they also make things happen. Title III people have been the risk takers in education. What Loren Eiseley, Benjamin Franklin Professor of Anthropology at the University of Pennsylvania, says about risk and hope serves as a final

tribute to those thousands who have fought hard for their innovations and experiments:

> Hope and risk, are they too great to expect of man? I do not believe it. They constitute this shadow. They have followed him for a million years. They stood with him at the Hot Gates of Thermopylae. They shared the cross at Calvary. I think it was really there that the great wave began to gather when all else seemed lost. We are again threatened with the insidious Elizabethan malady of weariness. But a voice spoke then of hope, and of great reversals, of impending tides. May this too be of such an age. May Francis Bacon's voice still speak of hope, not for man only, but of the survival of the planetary life without which our own lives are as nothing. The risk is there but the imcomitable human spirit will cry 'assume the risk.' By it alone has man survived. And only those who know what it is to risk can understand compassion. (Eiseley 1972).

## REFERENCES


Eisley, Loren. "The Hope of Man." THE NEW YORK TIMES, Nov. 6, 1972.

Enarson, Harold in THE CHRONICLE OF HIGHER EDUCATION, June 18, 1973, 16.

Forbes Magazine, September 15, 1968, 51-52.

Hearn, Norman O. "A Report on the Adoption Rate of ESEA Title III Innovations Following Termination of Federal Funding." A research report to the American Educational Research Association, March 3, 1970.

Huitt, Ralph. "Two Houses Do Not Make a Home." CONFERENCE ON INNOVATION, Washington, D. C.: Report by the President's National Advisory Council on Supplementary Centers and Services, 1969, 143.

Kimbrough, Ralph et al. CONDITIONS ACCOMPANYING THE SURVIVAL AND DEATH OF HIGH-RISK REGIONAL EDUCATION ORGANIZATION. Tallahasse, Florida: Department of Education, 1973.

# IS INNOVATION A DIRTY WORD?

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# IS INNOVATION A DIRTY WORD?

I plan to speak to you today not as a researcher but as an administrator, since that is what I am. Educational research and innovation are not my field of expertise. But I worry about them a good deal. The Education Commission of the States has a research department, but the total organization is primarily action-oriented. It is involved with the day-to-day realities of trying to bring together -- for the benefit of the schools and school children -- educators who have ideas and politicians who might have public funds to spend on some of those ideas.

So you should know that what I have to say is less "scholarly" than it might be, and more concerned with the practical problems of getting things done; and, maybe that's a good thing. I strongly believe that what has been giving innovation a bad name lately is not related to the calibre of new ideas for improving the schools. It is related to our ability to make the ideas work. It is a people problem -- an action-oriented problem.

Here's what that point of departure and my experience in administration lead me to conclude about educational research and innovation:

1. An innovation won't work if the motive for trying it is to advance an individual's desires for personal recognition as an "innovator." The idea must have substance, of course, but the motive must be pure, too.

2. The innovation must be applicable to the situation.

3. The innovation's objectives should be limited.

4. It should be carefully planned.

5. It must involve the people who will be affected by it and those who support the institution where it will be tried.

6. The innovation needs time to be carried out effectively, step by step.

7. You have to evaluate its progress along the way -- and not wait until everything is in place, because by then everything may be out of place.

8. The innovation has to be critically compared with other approaches to achieving the same objective.

9. It has to meet the test of cost-effectiveness.

With those principles in mind, let's look at some of the problems we've been running into with this innovation "business."

People want their money's worth. Tough but true. Caspar Weinberger knows that. Awaiting Senate approval of his nomination as HEW Secretary early this year, he told Congress he favored education programs "where we have the ability to measure what we are getting for our money, not just the blind application of money." Many members of Congress agree. Witness the meat-axe approach they have taken in recent days to federal educational research operations. It is a bread-and-butter issue, this innovation business.

And there are too many innovations. The number of them that have been proposed in the past few years have been so numerous -- and their publicity value considered so high by so many educators -- that the usual cautions you might expect with anything new frequently have not been followed.

The educator has too often wanted to be known as an innovator because that might help him secure a better job. If that's the motivation, it may pay off for the individual. But what about the payoff for the children in the schools? We can't forget them.

We haven't been able to determine the success or failure of many new ideas. We've engaged in too few down-to-earth analyses like the Ford Foundation's study of its own Comprehensive School Improvement Program of the 1960's -- a program openly dedicated to innovation and experimentation. The study, published under the title A Foundation Goes to School, made these telling points, among others:

1. The innovations studied "took hold best where the number of schools was limited and the objectives and techniques few and sharply defined.

2. The policy and governance structures for projects seemed to have little to do with their initial effectiveness, staying power, or ultimate acceptance by the sponsoring school or university systems.

3. Large-scale change apparently was more likely to occur when the grantor and grantee were agreed in advance on a proposed project's "specific purpose, nature, extent, and limitations."

4. The size of (a) grant seemed to have little to do with (the) ultimate success of the program. What counted more, it seems, is the proportion of an agency's operating budget that a grant represented. And the key reason was that the greater the proportion, the more the project commanded the attention of policymakers, staff members and the public. Involvement: a critical point.

Other studies (Austin 1972) also have shown that "In general the programs that make a difference were those that were carefully planned, had limited objectives and in which the course content was specifically geared to the mastery of these objectives." Not only have our planning processes in most cases been weak in determining which innovations to use and how to apply them, but quite frequently they also have been superimposed from on high (such as by the school superintendent), without adequate explanation to the staff and without the involvement of pupils and parents so they understand what is to be accomplished.

Without adequate involvement, the people most directly affected will be fearful as a result. Consider these "disclaimers," noted by Edmond Weiss:

> This evaluation study is intended to strengthen the school program, rather than find fault with it.
>
> This new teacher appraisal instrument will help teachers develop their individual skills, rather than being used to embarrass or discredit them.
>
> The new performance contract project will give us better ideas on how to operate our schools; it will not be used to make unfair comparisons between the current staff and the contractors. (Weiss 1972, 24).

The problem, says Weiss, is that no one believes the disclaimers.

What we have to keep in mind is that we've been tempted to try many new ideas without utilizing all our knowledge of <u>why</u> they may succeed or fail. That has to be dangerous and, in some respects, it accounts for the credibility gap between the schools and the public.

The schools have a unique place in our society and need to face up to that uniqueness and find some method of overcoming the researcher's isolation. Again, Edmond Weiss:

> The educational community has a good thing going for it. Despite frequent contact with parents and other complainants, the hulk of educators (except at the highest administrative levels) works in greater privacy and insulation than almost any other professional group. Very few scientists, engineers, salesmen, artists, or lawyers are able to do their job so utterly removed from the observation and evaluation of peers, colleagues, or bosses. In some schools, a tenured teacher is never observed by a principal, or, indeed, by another teacher. While teachers may regard this as a legitimate privilege of their job, they should know that few other professionals enjoy this privilege. While persons in other careers may have fewer "form-filling" obligations, they are nevertheless obliged to meet frequently, sometimes daily, with managers or executives (and this is true of the managers and executives as well). Their career paths are often charted in these sessions, and they know that, should they contrive to become invisible to their superiors and colleagues, their opportunities for advancement or job security may vanish. (Weiss 1972, 25)

So when we ask about the effectiveness of innovations, we must look at the climate in which they are initiated. Weiss describes the kind of climate which would seem desirable:

> In a well run organization, where people trust each other, and no employee feels he has a lifetime option on his job, research and evaluation studies can be conducted genuinely, respectfully, fairly. Decision-makers know when and how to correct or punish an employee. And they know, in many cases, the difference between a reasonable conclusion and a vindictive course of action. In this context, where co-workers trust each other, it is possible for research and evaluation data to be used in a civilized way. (Weiss 1972, 26)

If this climate exists, if the proper procedures have been followed and if open evaluation is applied, then it would not be difficult to get innovations in the schools. NIE, as it approaches its task, must look to the kind of criticisms that have been so ably labeled by Cronbach and Suppes:

> If research is taken seriously as a contribution to a growing body of knowledge, it is published in a scholarly or technical periodical where it can readily be scrutinized, challenged, and reinterpreted. Only a fraction of sponsored research in education is exposed to review in this way. A technical report may be filed with the sponsor, with a central repository, and in a few libraries. Speeches embodying the conclusions or recommendations are likely to be made. But, as another of the illuminating Congressional inquiries tells us, only 11 per cent of the technical reports based on U.S. Office of Education projects appear as regular journal articles. Almost no other government agency concerned with research reports so low a figure; compare these representative figures: Department of Agriculture, 48 per cent; NSF, 95 per cent; Veterans Administration, 45 per cent. The fault, let us emphasize, is not the failure to "disseminate" findings; the fault is that reports do not appear in scholarly journals or monograph series, do not receive critical review, and hence, are not strengthened by disciplinary debate. (Cronbach and Suppes 1969)

But innovations in schools must answer not only to a broad research community, but also to the public; and the evaluation studies of our research and the processes used are rarely converted into simple prose in such a way that the public can understand the results. From my position it is obvious that, as Frank Keppel said a few years ago, "education is too important to be left in the hands of the educators." This is what the public is saying about innovations. They want better schools, better

education for their children, a better society and a better life for everyone, but they are not sure that we know how to deliver all these things.

And if perhaps we aren't sure, either, then we have no right to pretend that we do. Certainly, if the funds for educational research are going to be limited even more, we owe the public a much more efficient and selective approach to innovation.

I recall reading about a national conference of educational researchers not too long ago. Naturally they talked about their pet projects. Hundreds and hundreds of projects. And some of the findings, one education periodical kindly told its readers, "appeared to reach the trivia level." We all know trivia when we see it, of course. The challenge, I submit, is to find out how to stop that sort of thing from getting in our way. As Cronbach and Suppes put it: "...Education needs dispassionate evaluation of each new procedure to make sure that it is educating as intended and to identify problems still unsolved." (Cronbach and Suppes 1969, 4.) That is probably our best guide.

## REFERENCES


Austin, Gilbert R. "Evaluation in the 60's -- Accountability in the 70's" PLANNING AND CHANGING, Vol. 3, No. 2., p. 12, July 1972.

Cronbach, Lee J. and Suppes, Patrick (eds.) RESEARCH FOR TOMORROW'S SCHOOLS, The Macmillan Company, New York, 1969, p. 245.

Weiss, Edmond. "Educational Accountability and the Presumption of Guilt." PLANNING AND CHANGING, Vol. 3, No. 3, Fall 1972.

The Ford Foundation Office of Reports. A FOUNDATION GOES TO SCHOOL, New York, November 1972, p. 42.

# A SCHOOL DISTRICT STRATEGY FOR INTERFACING WITH EDUCATIONAL R & D

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## A SCHOOL DISTRICT STRATEGY FOR INTERFACING WITH EDUCATIONAL R & D

What can we conclude is known about how school districts respond to the need for improvement? What is the base of knowledge from which practicing school administrators can draw?

The Administering for Change Program (ACP) has a history of studying the literature on change (Maguire 1970 a; Maguire 1970 b; Temkin 1970; Maguire 1971). We have also conducted meetings and seminars to listen to teachers, principals, superintendents and state department of education officials as they considered change.

Our accumulated experience with these and numerous other related activities suggests that the knowledge base of change is fragmentary and incapable of providing guidance for those who want to understand and act. How can this assessment be valid when thousands of papers have been written on the subject of how to bring change to schools?

Most of the change-related knowledge is, in actuality, models, assumptions and hypotheses. Key terms are often vague, ill-defined and poorly conceptualized. The survey approach, which has been the predominate mode of data-gathering, has produced a plethora of correlates of innovativeness and/or the innovation process. Statements about causal relationships between dependent and independent variables, however, are often lacking. The few data-based studies have been so loosely conceptualized that their results are open to many alternative explanations and as such, offer little help to practitioners.


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While the conclusion that the knowledge base is inadequate may appear to have pessimistic implications; we do not see it that way. The literature contains helpful controversy, logic and a variety of attempts to explain portions of what we know to be very complex interactions.

Only a few years ago we could justly characterize the array of innovative practices* available to schools as mainly being composed of ideas, for example: modular scheduling, non-gradedness, treat all children as individuals, seminars for the gifted. Implementation of such ideas requires that schools make creative and adaptive responses to achieve successful interfact between the idea and the educational setting. Brickell (1961) found in 1960 that schools tended to adopt innovations that did not require changes to the "existing structural framework." He defined this term by indicating that "Few innovations embodied changes in the kind of people employed, in the way they were organized to work together, in the types of instructional materials they used, or in the times and places at which they taught."

Today, however, R & D innovations in which the organizational and personal risks to users have been reduced through extensive user-oriented field trials are emerging in large numbers from recently created R & D institutions. R & D classroom innovations usually embody

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*We define innovative practice or innovation as a specific means asserted by someone to accomplish a particular goal(s). It is new to the site (district, building, or classroom) and may be imported from outside or locally invented. It may have a direct or indirect impact on children.

complete instructional systems and strategies including training for teachers and principals, procedures for implementation, procedures for evaluation and, of course, strategies for classroom instruction. The change from idea to fully-engineered R & D innovation requires a different kind of perspective by the schools. There has been a change in the process of change.**

What view of the R & D production process should an R & D agency maintain? To what degree should the view be through its own eyes or through those of the schools? Should the R & D agency develop a capability to advise schools on the use of an innovation or should the schools have their own capability to select and implement innovations? It is the contention of ACP that the R & D agency cannot hope to have schools implement its wares as long as schools are unable to interface with the new kinds of innovations being made available to them. The view that knowledge utilization will come about through linkages created by forces external to the schools assumes that they are to be recipients of a content transmitted by structures that know their wants and needs better than they do. Havelock, perhaps the leading proponent of this view, says that linkage is the unifying concept. He goes on to say:

> ...technically speaking, the resource person needs to develop a good 'model' of the user system in order to 'link' to him effectively. Clinically speaking, we could say that he needs to have empathy or understanding. At the same time, the <u>user</u> must have an adequate appreci-

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** Credit for this notion belongs to Professor Leon Ovsiew of Temple University who has given considerable thought to the problems of congruence between innovative practices and the schools.

> ation of how the resource system operates. In other words, he must be able to understand and partially simulate such resource system activities as research, development, and evaluation. (Havelock 1973, 165)

The Havelock conception is useful but by no means sufficient to enable a school district to deal with the practicalities of innovation. We agreed it is essential that the R & D agency and linking change agents, serving as intermediaries between the R & D producer and its clients, understand the schools. Of equal importance is the need for schools to understand the potential contributions that R & D can make to instructional improvement. Still another view, however, is required before school districts will be able to adapt to the change in the process of change. The view of the change in the process of change must include the producer system, the intermediary system, and the client system. A missing ingredient, then, to complement knowledge utilization views, is a set of local strategies that school districts can employ to relate to externally-produced innovations. Our own experience in working with school districts indicates that for the most part, they have been employing what we refer to as the "single building strategy" for implementing externally-produced innovations.

Characteristically, the single building strategy all but divorces the central office from change activities. Through this strategy, a principal learns about a classroom innovation, decides that it ought to be introduced into his school, proceeds to involve teachers, train staff, order materials, and, in general, takes responsibility for all aspects of innovation. Central office linkages and approvals during


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the process are generally no more than those that are absolutely essential. While there are many flaws and shortcomings inherent in this local change strategy, it nonetheless may be the easiest and perhaps most prevalent approach found today. The strategy has little long run viability and would have little present viability were the central office to be knowledgeable of available alternative classroom innovations as well as have a capability for supporting the adoption/implementation functions. In our experience, however, this is not the case.

ACP is now helping school district administrators to understand and use another strategy for introducing and implementing classroom innovations. To formulate this strategy we have drawn from the work of others. Before describing the elements of this other strategy, we should indicate some of what we learned from schools that implicitly used the single building strategy. This experience indicates:

- Innovative practices are often funded with "soft" monies. As funding patterns change, there may be no person outside of the school in which the innovation is being tried to argue for its continuation.

- In many instances a district does not clearly define what it expects to result from an innovation.

- Even in instances for which clearly defined results are anticipated by the district, communication of these expectations to principals and teachers is inconsistent or lacking.

- Training for change-related competencies and innovation-specific role changes is usually not coordinated across schools using an innovation within the district.


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- o Monitoring of classroom implementation is usually not coordinated across schools within the district, if it is done at all.

- o Selection and ordering of instructional materials for the classroom is usually not coordinated across schools using the same innovation within the district.

- o Evaluation of the effects of an innovative practice is usually not coordinated across schools within the district and is most often an after-thought, if it is done at all.

- o Few districts replace an existing district-wide practice by an innovation that has been tried in a few schools in the district even when it is found to be successful.

ACP, in deciding that the school district itself needed a strategy that could be used to relate to externally-produced innovations, was in fact assuming that other change strategies were looking at the problem of getting innovations into schools in more of a producer mind-set than the practicalities of schools allow. We did, however, borrow from other strategies as follows:

1. From Gideonse's market model (1971), we adopted the idea that sensitivity to needs of the user is paramount. We do this by identifying functions, skills and insights that the schools with which we work find difficulty in doing. We also recognized Gideonse's admonition that it is undesirable to set standards no higher than to make present school administration practice better.

2. From the strategy identified by Havelock (1973) as the problem-solving strategy, we saw that a change agent relationship is important, especially for training school district staff and monitoring the implementation of innovation. We have used ACP staff in this change agent role and are now documenting and studying implementation processes through this change agent role in a Network of School Districts.

3. From the strategy identified by Havelock (1973) as the social interaction strategy, we saw the need to study and learn about adoption and diffusion. We use the Network of School Districts to study adoption and diffusion within the school district by means of longitudinal studies of selected sites.

4. From the political strategy discussed by Bentzen and Tye (1973), we have developed working relationships and ties with many state departments of education. We see the states as becoming more and more important to the improvement process and are studying how they are identifying functions and organizing to support the introduction of innovation to schools.

5. The instructional materials improvement strategy of Bentzen and Tye identifies a need for continual contact with the developmental feedback from users. These authors compare the materials improvement strategy to one identified by Havelock as the R-D&D strategy as follows:

> Both the R-D&D and the instructional materials strategies view knowledge transmission as the development through research and field trials of a package that eventually can be disseminated to a wide range of user schools. The two strategies differ in that R-D&D tends to package what basic research has designated as "good" and assumes a passive user, whereas the instructional materials approach is oriented to what the user will buy and is guided by marketing research techniques. (Bentzen and Tye 1973)

> The philosophical distinction embodied in the materials improvement strategy has long served as the central basis for how ACP develops training materials.

ACP has examined what we have learned and has constructed a strategy composed of elements that have been drawn from the previously cited conceptions. We refer to this strategy as planned change although we take no credit for a term that has been used for a long time. (Barbe and Hall 1966; Chin 1967) The strategy attempts to overcome many of the weaknesses of the single building strategy by integrating the central office into the change process. In essence, we help them to see change

as an organizational problem for the school district. A training system designed to improve the capabilities of administrators to work with externally-produced innovation is also introduced.

In the absence of an empirically-validated model for how the school district can behave in response to its needs for externally-produced innovations, we have examined our school experiences in terms of systems analysis concepts. We find that a straight forward systems view of the district change needs is helpful as an organizing framework for the range of behaviors from pre-adoption decisions to diffusion considerations that a district faces.

Roger A. Kaufman (1972) lays out six steps which he uses to adapt systems analysis methods to educational management. These steps are:

1. Identify problem (based upon documented needs).
2. Determine solution requirements and solution alternatives.
3. Select solution strategies (from among the alternatives).
4. Implement selected strategies (to achieve required outcomes).
5. Determine performance effectiveness.
6. Revise as required at any step in the process.

ACP has used a basic systems approach in viewing how to improve present practice in the schools. To this systems orientation it has brought its field experience. We now lay out the systems steps, their analogous school district phases and then discuss present practice and the things ACP is doing to improve the work of the schools.

| | SYSTEMS STEP | SCHOOL DISTRICT PHASE |
|---|---|---|
| 1, 2, 3 | Identify problem, determine and select alternatives. | Pre-planning |
| 4 | Implement select strategy. | Training, implementation, monitoring implementation. |
| 5 | Determine performance outcomes. | Evaluating |
| 6 | Revise as required. | Updating plans |

Pre-planning phase. Pre-planning is a consumer protection activity conducted by the school district to assure that they have a reasonable understanding of what they need as well as what they are getting into and why. In this phase, administrators describe the student needs that indicate change is necessary, define the kinds of student outcomes they expect to attain, select an appropriate innovation, plan for the schools that are to be involved over a multi-year period, and consider resource requirements.

Our experience with schools indicates that few, if any, of these kinds of activities are conducted before an innovation is introduced into a school. Often there is no clear justification for the decision to adopt an innovation, yet over a period of a year or two, the rationale for the decision is sorely needed in order to achieve desired results.

Training, implementation, monitoring implementation. Training for central office administrators, principals, and teachers is necessary for


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planned change at the district level as well as specific change-related roles within the school itself. Training as part of the change process is in part pre-planning and in part implementation. Coordination of change functions is important for central office personnel, especially when several schools are involved in implementation. Principals and teachers need a clear understanding of how the central office can support the implementation of an innovation in classrooms. They also need help in working with the specifics of their new roles that are important to successful classroom implementation. Finally, the principal (in the case of a single school) and central office administrators and principals (in the case of several schools) need to be able to monitor classroom implementation in order to be sure that classroom instructional strategies are consistent with the kinds of student outcomes expected by the district.

Our experience with schools indicates that administrators do not have an adequate appreciation of the role of training in terms of change. We have been able to underscore the importance of initial training, but continuous training needs sometimes are neglected. Implementation activities in the classroom suffer when (1) pre-planning activities do not provide a clear indication of the kinds of student outcomes expected, (2) teachers and principals have not had opportunity to consider the implications of a change, and (3) training is not build in as a continuous staff development activity. Implementation also suffers when the importance of classroom implementation monitoring is underestimated.


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Determining performance outcomes phase. Evaluation of the results of a classroom innovation is essential for the school district if it is to decide whether to continue or to expand or to terminate the new practice. ACP believes that an evaluation plan should be prepared by the district as soon as is practical after the pre-planning phase. Evaluation should be consistent with the pre-planning so that the student outcomes sought by the district are those that are evaluated.

Our experience suggests that few districts engage in this kind of evaluation. Most often implementation is seen by them as being so important that evaluation is placed aside. Later in the school year, evaluation information is needed, but by then, there is little reasonable hope of determining results. We have also found that most districts lack the internal capabilities needed to carry out adequate evaluations of innovative practices.

Updating plans phase. This process is a special case of pre-planning. Essentially the district needs to reconsider the merits of the innovation. It may choose to learn about community perceptions and staff perceptions as an additional input into the decision-making process. Changing funding patterns are also important for the district to consider.

Our experience suggests that few districts replace an existing practice with a new practice even when the latter has been demonstrated as effective.


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Summary. In summary, we see the problem as being that school districts do not have a capability for relating to externally-produced innovations. A knowledge base that enables districts to view innovation across considerations that range from those prior to adoption to those about whether or not to diffuse the innovation throughout the district does not now exist.

Our investigation will include study of pre-adoption decisions, training needs, classroom implementation considerations, evaluation approaches and diffusion considerations in school districts. We see this investigation as a process that includes:

- Analysis of present problems that schools have with relating to externally-produced innovations.
- Development of approaches that can improve the capabilities of the district.
- Collection of data about factors that encourage and limit these capabilities.
- Analysis and reconsideration of what schools are able to do.
- Evaluation of the approaches in different environments under more general conditions.

ACP's role in research. ACP is working with administrators and teachers in 55 school districts. In those districts we are studying the implementation of innovation in order to add to the knowledge base that considers both the functions of school administration and the complexities of change. The challenge for ACP is to systematize our emerging as well as past experience with schools and to build general principles

that contribute to a knowledge base that will permit school districts to improve the quality of their instructional offerings through externally-produced innovation.

ACP wants to learn from the multiple perspectives of the school district staff -- teachers, principals and central office administrators. We want to understand not only how improvement can be brought about through innovation, but why we get the results we see.

In the short-term we are confining our investigation to the school districts with whom we work. Attention will be on ACP itself; its training products, its services and its ability to help school districts to improve their capabilities.

Once the short-term results are known, ACP will be in a position to project its research activities beyond its present scope to problems of change in new school environments. The tools of any long-term applications for the program will be a knowledge base related to how and why schools are able to implement externally-produced innovations and the training materials that support major aspects of change implementation.

## REFERENCES


Barbe, Richard H. and Hall, Roy M. "The Effect of Planned Change on National Agencies." THEORY INTO PRACTICE. p. 54, February 1966.

Bentzen, Mary M. and Tye, Kenneth A. "Effecting Change in Elementary Schools." THE ELEMENTARY SCHOOL IN THE UNITED STATES. NSSE Yearbook. pp. 360-361, 362-365, 1973.

Brickell, Henry M. ORGANIZING NEW YORK STATE FOR EDUCATIONAL CHANGE. Albany, New York, State Department of Education p. 18, 155-158, 159-160, 1961.

Chin, Robert. "Some Ideas on Changing." PERSPECTIVES ON EDUCATIONAL CHANGE. Richard I. Miller (ed.), New York: Appleton-Century-Crofts. pp. 332-333, 1967.

Gideonse, Hendrik D. RESEARCH AND DEVELOPMENT FOR EDUCATION: A MARKET MODEL. Monmouth, Oregon: Teaching Research Division, OSSHE. 1971.

Havelock, Ronald G. THE CHANGE AGENT'S GUIDE TO INNOVATION IN EDUCATION. Englewood Cliffs, New Jersey: Educational Technology Publications, p. 165, 1973.

Kaufman, Roger A. EDUCATIONAL SYSTEM PLANNING. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. p. 7, 1972.

Maguire, Louis. AN ANNOTATED BIBLIOGRAPHY OF THE LITERATURE ON CHANGE. Philadelphia, Pennsylvania: Research for Better Schools, Inc. 1970.

Maguire, Louis. OBSERVATIONS AND ANALYSIS OF THE LITERATURE ON CHANGE. Philadelphia, Pennsylvania: Research for Better Schools, Inc. 1970.

Maguire, Louis, Temkin, Sanford and Cummings C. Peter. AN ANNOTATED BIBLIOGRAPHY ON ADMINISTERING FOR CHANGE. Philadelphia, Pennsylvania: Research for Better Schools, Inc. 1971.

Research for Better Schools, Inc. HOW INSTRUCTIONAL INNOVATIONS GET INTO SCHOOLS: A REVIEW OF RESEARCH FINDINGS. Philadelphia, Pennsylvania: Research for Better Schools, Inc. 1973.

Temkin, Sanford. AN EVALUATION OF THE LITERATURE OF COMPREHENSIVE PLANNING: WITH AN ANNOTATED BIBLIOGRAPHY. Philadelphia, Pennsylvania: Research for Better Schools, Inc. 1970.

# RESEARCH AND INNOVATION:
# UNANSWERED QUESTIONS

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# RESEARCH AND INNOVATION: UNANSWERED QUESTIONS

## THE PROBLEM OF DEFINITION

The question to be addressed by this symposium is: What does research say about getting innovations into the schools? This is an enormously difficult question for many reasons.

First, we have no generally agreed upon definition of innovation. Is it an innovation when a school or school system adopts a program or technique which has already become common practice in other schools or systems? Is a change in present practice innovation? Must an innovation have a certain uniqueness to be considered an innovation? These are but a few of the questions underlying the difficulty of defining innovation.

Second, the question encompasses such consideration as whether the innovation was implemented, how it was implemented, who were the implementers and, more importantly, what if any objectives or goals were accomplished as a result of the innovation? Third, one must ascertain if the innovation had, as its primary focus, people, programs or systems.

The problem of definition becomes more difficult when the views of those involved in the process of innovation are taken into consideration: developers who use existing research findings to formulate ideas for materials; the marketers who sell products to individuals or to school districts; individuals or institutions who may be interested in promoting certain materials or ideas which they have had a part in generating or funding; and those who directly incorporate innovations: administrators,

teachers, community organizations and boards of education. In all probability, innovation would be viewed very differently by each of these groups.

## MODELS OF INNOVATION

Despite the lack of agreement on definitions of innovation, models for program change and innovation exist in abundance. Havelock (1969) discusses some of the more common models of program change. They include the research, development and diffusion model, the social interaction model or perspective and the problem-solving model or perspective. The research, development and diffusion model is the one most frequently used in government policy planning because it appeals to federal priorities, it promises widespread product diffusion and it has been used successfully in other fields such as engineering and design. This model entails a progression through channels beginning with basic research and ending with packaging, production and dissemination. It is in this latter area, dissemination, that the federal government has placed its primary focus in funding procedures. The federal government is willing to accept high initial development costs prior to any dissemination activity because it anticipates higher gains in the long run. An example of this approach is the adoption of programmed instruction.

The second model cited by Havelock, the social interactive perspective, is thoroughly based on empirical research. It is the only one of the models that considers the users' position in the diffusion process. The personal element of face to face contact is taken into consideration as are group identity and group loyalty.

The third model is the problem-solving model or perspective. This model is totally user-oriented and the role of the outsider is that of catalyst, collaborator and consultant. It is the user who serves as the source of motivation, creativity and evaluation.

WHAT WE KNOW

Our base of knowledge is fairly broad. We know a lot about materials and their use. Our knowledge of the personal characteristics, education, experience and attitudes of key actors in education is growing. We know a good deal about how people react to change in general and to specific changes. Our knowledge of large and complex organizations is considerable and growing. We know about the structural looseness of school systems, the autonomy of the teacher in his or her classroom, the way most principals spend their time and a host of other things which affect the educational process. We can refer to scores of studies of how certain changes or innovations were introduced into individual schools, school systems or individual classrooms. We can draw on the insights from medicine, rural sociology, agriculture, business and industry to assist us in understanding better the change process, development and diffusion. And our knowledge is constantly growing.

What we seem to have difficulty doing, however, is utilizing all of our knowledge and experience to design, implement and diffuse innovations which result in improved practice and/or the achievement of specific goals or objectives. Perhaps this is because we have too often failed to ask the fundamental question: Innovation for What?

## INNOVATION FOR WHAT?

Over the past decade there has been so much talk and activity around the word innovation that it has taken on pejorative connotations among many persons, particularly teachers and parents. When the Elementary and Secondary Education Act of 1965 was passed, the name of the game became "get the money and run." Under Title III specifically and under the other titles generally, the introduction of new programs, personnel, materials and equipment became commonplace in many systems. Proposals were written and submitted, programs were funded, most of them based on the potential impact of such programs on the education of children and youth. But there was little, if any, competent research done on the impact of these innovations on the behavior or achievement of students. Parents were rarely polled as to their feelings. Although many paraprofessionals were hired, little research was done on the competency, resourcefulness, or general value of paraprofessionals.

A survey of all districts in the state of California who participated in Title III programs is illusrative. (Johnson 1964). The questionnaire was designed to obtain information regarding changes in school districts as a direct result of Title III funding. The results showed that almost all of the administrators felt that "significant changes" had taken place in instructional programs. Two thirds of the administrators felt that the program changes brought about equally significant changes in organization for instruction within the schools. But throughout the reports of these districts, there is no listing of changes in test scores, pupil achievement or other significant student behavior. Rather, the numbers of students and teachers involved in experimental math in-service courses

and lab were used as the criteria for change. Moreover, two thirds of the reports from school districts contained no objective data regarding pupil achievement and, of the one in three that did include objective data, less than one third included test data.

Another study suggests that the tendency of a staff to innovate could be positively related to its degree of cosmopolitanism, travel experience, experience in other school systems and record of attendance at professional meetings outside the state. (Hearn 1973). Again, the focus in this not atypical study was staff adaptability rather than change in student behavior. These concerns are legitimate. Perhaps it is necessary to create the necessary conditions for innovation or change before one can address the ultimate goal of improving student performance in many areas, affective as well as cognitive. But it is precisely because the link between the ultimate goal of student improvement and the immediate goal of staff development is seldom made explicit that so many inside and outside the educational system have developed such a skeptical attitude toward innovation. This is particularly true of the professional practitioner who has become increasingly alienated from the researcher, and the parents of poor children who have become increasingly alienated from the schools.

## RESEARCHERS VS. PRACTITIONERS

It is becoming apparent that a real gulf has developed between the research community and the practitioner. Why is this so? One part of the answer may be that many in the research community are too far removed from the realities and day to day complexities of the school

culture. Even more important, perhaps, is the fact that the status hierarchy in the research community assigns its greatest rewards to theoretical and abstract research. Basic research in learning, human growth and other more abstract concerns stand at the top of the research ladder. I have no quarrel with this state of affairs. Most parents and educators would argue strongly for an intensification of competent and continuous research in these areas. They would also argue, in my view, for more action and applied research to translate the finding and knowledge of the theorists and researchers to the realities of the day to day life of the practitioners.

The importance and power of this notion becomes more apparent when one considers that the practitioner who occupies a powerful position in the educational system may be the person with the greatest potential for becoming a change agent. Lacking knowledge and information about research findings which could help him to improve practice and bring about improvement and change in the system increases the probability that whatever actions he may take may be less than optimal. The research community has rarely taken the trouble to find out the perceptions, attitudes and opinions of teachers and other professionals as these relate to innovation and change. Surveys, such as the one concerning Title III mentioned earlier, are usually focused on one group. Superintendents were surveyed, but there was no survey of teachers, paraprofessionals, parents or students, all of whom are critical to implementation of innovation. Moreover, until recently, the research community has seldom focused on teacher education in universities as a potential source for getting innovation into schools. Only recently, after the

surge of alternatives to traditional public schools, have universities and teacher colleges begun to veer from the traditional paths.

## IF NOT INNOVATION, WHAT?

The considerations discussed above aside, there are large and significant gaps in what research can tell us at this time. Consider, for example, the many significant innovations which have been introduced into schools and school systems that do not fit comfortably into the existing models or research designs with which we are most familiar. Many of these changes have either been ignored or examined only in the most perfunctory manner. Alternative schools are a case in point. These schools have developed in many parts of the country and for a variety of reasons. In some school systems they developed in response to community or student pressure for other than traditional avenues of educating students. In other instances they developed as ways of educating those students traditional schools were failing in significant ways. In still other instances, alternatives were developed as a result of the bandwagon effect: superintendents wanted to be considered innovative or modern.

To speak of alternative schools, however, is not very helpful. The variety is staggering as Vernon Smith (1973) indicates. The more important point, however, is that each alternative public school has developed in response to particular local needs. And so widespread have these alternative schools become and so many have developed independent of each other that a consortium has been organized to study their programs, concepts and operation in order that others may be encouraged to develop

options in public education. It is interesting to note that in this instance an already adopted innovation has become the target of research and dissemination.

If one examines Smith's list and the lists of others, it seems clear that the research community did not play the significant role in the adoption of this innovation.

The prime incentive in most of the locations seems to have been a perceived need to change. And in a very real sense this perceived need to change could be traced to societal changes which occurred. Consider, for example, the increased activity and agitation of minority groups and the poor around such matters as the curriculum, tracking, and instructional materials. Few would disagree with the contention that such militant activity played a significant role in the development and adoption of multicultural, bilingual and ethnic studies programs and materials in individual schools and within school systems. Today, there are few schools within the central cities where one would not find evidence of the role of black Americans in history. The existence of many of these books and other materials and their presence in the schools are not the result of research on the contribution of ethnic studies to quality education. Rather, they are there because of demands from certain groups and communities that self-awareness and a more complete history of America be taught in schools.

Consider personnel innovations. It seems obvious that the increased number of black Americans, Spanish-speaking Americans and women in professional and paraprofessional positions at almost all levels in education is the result, not of research and development, but of other forces

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usually external to the school. These and other changes have been brought about in part by citizen activism, but also by governmental policies of affirmative action or equal employment opportunity. Other innovations or significant changes brought about by court mandates are so common they need not be recounted here. The changes brought about by court ordered desegregation are staggering in their magnitude and importance.

## RESEARCH PROBLEMS

It has been noted earlier that it is important to survey and investigate the entire spectrum of participants and/or actors in research on innovation. To say this however, is easier than doing it. How does the researcher choose? What depths must he plumb? Even if these problems can be satisfactorily resolved, how does the researcher correlate the different factors? When, if ever, does correlation equal cause and effect? Consider the children. Knowing them involves more than knowing their academic background or learning readiness or learning style. It encompasses the homes they leave, the meals they eat or don't eat, the concerns they bring to school and the implications growing out of the daily and hourly interface between student and teacher, student and student. The research community seems to be less than well equipped to deal with these factors. Much of the research in these areas appears to be little more than a description of "what is." The more promising domain for researchers seems to be, primarily at least, in pre and post evaluative testing of pilot projects or new programs, although recently there has been a welcome use of the formative and summative evaluative strategies and methodologies as well. The difficulties are considerable.

Affective factors influencing education are difficult to identify, even more difficult to measure and evaluate.

To use a simple example, let us suppose an attempt were made to evaluate how watching the television programs Sesame Street and Electric Company affected the reading readiness of preschoolers or the reading scores of first graders. In this instance it would be an easy matter to install the innovation in schools. All you would have to do is place television sets in classrooms and have the children watch the programs every day for a specified period of time. What would be infinitely difficult to do would be to demonstrate cause and effect between watching the programs and resultant scores. What would still be problematic is evaluating how skillfully and willingly a teacher incorporates these programs into her lessons and/or builds upon these experiences in her other activities with children. Clearly, these two difficulties do not exhaust the field.

A final, but extremely important, difficulty is the "metaphysical pathos" of the researcher. Lovejoy (Gouldner 1961) defines this term as "the set of sentiments with which every theory is associated, but which those subscribing to the theory can only dimly sense." Lovejoy was warning that "a commitment to a theory may be made because the theory is congruent with the mood or deep-lying sentiments of its adherents, rather than merely because it has been cerebrally inspected and found valid." The research community, no less than practitioners and others, is susceptible to bias.

SUMMARY

Research can and has told us many things about getting innovations into schools. There are other things research has not told us and, perhaps, cannot tell us at this time. In my opinion, what the research community has not sufficiently addressed is the question of what, if any, difference it makes whether an innovation is installed in a school or school system. If we measure that difference in terms of what happens to children, our empirical data will be found wanting. The ultimate value or significance of the successful installation of an innovation is its effect on student achievement, behavior, attitude change and a host of other student-based variables. But it is precisely in these areas that objective, or even subjective, data are lacking or inadequate. I would strongly urge that those who are concerned with innovation and change in school systems keep uppermost in their minds the ultimate user or object of the innovation: children. Whether the innovation, however defined, is large or small, good or bad, relevant or irrelevant, effective or ineffective are necessary, but insufficient considerations. Unless there is an explicit and manifest connection between the innovation and the goal of improving the learning of children, the question: what research says about getting innovations into schools is not worth asking.

## REFERENCES


Gouldner, Alvin W. "Metaphysical Paths and The Theory of Bureaucracy," in Amitai Etzioni (ed.) COMPLEX ORGANIZATIONS: A SOCIOLOGICAL READER. New York: Holt, Rhinehart and Winston, 1961.

Havelock, Ronald, PLANNING FOR INNOVATION THROUGH DISSEMINATION, UTILIZATION. Ann Arbor, Michigan: Center for Research Utilization, University of Michigan, 1969.

Hearn, Norman. "Where, When and How to Innovate" in PHI DELTA KAPPAN. March 1973.

Johnson, Donald. "Title III and The Dynamics of Change in California Schools." in INNOVATION IN EDUCATION. Matthew Miles (ed.), New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Smith, Vernon. "Options in Public Education: The Quiet Revolution." PHI DELTA KAPPAN. March 1973.

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## WHAT RESEARCH SAYS ABOUT GETTING INNOVATIONS INTO SCHOOL SYSTEMS

The message of the presentations appears clear. At best, research efforts to date have produced a sketchy "modus operandi" for getting innovations into schools. It appears there are many questions still to be answered. Yet, there are some other, perhaps more compelling, themes in the symposium for those who pursue the study of innovation.

1. School districts, at least if one accepts superintendents' self-reports as detailed by Havelock, may be innovating without significant help from the outside. I feel somewhat skeptical about subjective accounts of changes without supporting objective evidence. The apparent paucity of outside resources in the opinion of the superintendents is a view substantiated by personal encounters with realities both inside and outside school districts. Could it be that outside resources frequently may not have relevance to the particular problems involved? Of course, if, as the data suggest, school people are attempting to initiate improvement and reform across the classifications reported, there is hope. These are days of increased public demands for school reform and improvement. In a fashion, such demands do represent an unobtrusive measure of the hope held for the schools. To demand that schools deliver could imply there is a belief that they can. The innovators waiting in the wings, however, may interpret the limited amount of outside input into innovations as appalling evidence of poor judgment on the part of school district personnel. One detects a murmur about educational gatekeeping

in their appraisal of this situation.

2. Complexity, size and specialization appear to be the hallmarks of innovating institutions. This finding represents Baldridge's distillation of the maze of institutional characteristics from key studies in innovation. He identifies the institution most likely to innovate as larger, more complex, having more specialized staffs, serving more varied and transient population in more urbanized settings than institutions not given to innovation. I am uncomfortable in using the sample of Illinois school districts with average daily attendance levels of about 3,000 pupils to generalize to major urban school districts. I must admit that the San Francisco example is more comfortable for such generalizations. Apparently, as Baldridge notes, tentative conclusions from these and other continuing studies of innovation do substantiate conditions of size and complexity in institutional make-up as being conducive in innovation.

However, Baldridge's anticipation that additional complexity needs to be introduced into underorganized and simpler institutions that are not prone to innovate is troubling. He proposes an expanded middle level management and increased centralization. There might be a "point of no return" related to complexity and size operating here, beyond which these characteristics may become blocks to change. The studies may have neglected to test out this prospect. I find it difficult not to predict an expanding bureaucracy and proliferating "red tape" as the likely result, as these personnel gain visibility and justify their function. Yet,

there is no doubt that innovations need support from the line and staff personnel who will see it as their responsibility and believe they are accountable for it.

Finally, Baldridge's "givens" related to teacher career ladders as facilitating innovative behavior are sound. Meager efforts have been made to reward teachers who would innovate.

3. Priorities in the current proliferation of investigations into the change process do not focus on effectiveness of the innovations. Watson's concern that this neglect might prove to be a major shortcoming of these research efforts is well founded. Amazingly, this concern received little emphasis in this symposium. Do larger, more complex institutions in fact innovate with more effective results than smaller, less complex institutions? In my opinion, the effectiveness factor is the raison d'etre for the innovation in the first place. As we discuss characteristics of innovating institutions, we also need to know what type of person will take the risk and what style of leadership he will exhibit. Then, did it make a difference? I hold a major concern about the lack of focus on effectiveness in the plans for studies shared at this meeting.

In the matter of effectiveness, I am also critical about the very definition of innovation as it has been explained by various presenters. Their viewpoint that innovation does not automatically imply effectiveness seems curiously isolated from educational practitioners' feeling about the term "innovation."

Dr. Pierce's question about whether or not innovation was a dirty word appeared to be the only direct facing up to the condition I am attempting to describe. My view from the field is that innovation as a term, by and large, invites skepticism. In the patois of those representing the targets for innovation, the term has lost face.

4. Propagation efforts related to R & D products have generally overlooked the need for building school staff capabilities in using such resources. Temkin's account of new direction toward development of school staff competencies to utilize R & D products is encouraging. Hopefully, such development will emphasize how to apply appropriate criteria in selection of R & D resources. Most administrators and their staff would welcome opportunities to grow in the planning of and working with change -- change which they consider to be relevant to the situation. R & D agencies seeking the role of "change agents" must be sensitive to such issues as profits that might be involved and the disdain with which "hit and run" consultants are likely to be held. In their zeal as "change agents," they must recognize that many school staff might feel that all "truth" is not on the side of the R & D agency.

5. Scant attention has been given in the presentations to concern for the life cycle of innovations and their subsequent trend to rigidity. Once innovation becomes institutionalized, it is part of the establishment. Is it then a force against change? Does the innovation finally become one of those educational gates replete with an educational gatekeeper (no doubt the former innovator) daring any change to pass?

In conclusion, I have a regret about the symposium content. This involves the very limited input from school people in the real world. We should hear more from them about "innovation," as they need to hear more from innovators. Communication will be vital if R & D is to betome a resource to schools seeking change.

The setting for this symposium, in a way, symbolizes what I am trying to say here.

We are removed from the action, reflecting about it, applying all of our perceptions, some true and others distorted. We must not overlook our fallible state. Hopefully, such application to our task will match, at least in some degree, the quality of the panorama around us... On a clear day, perhaps we will see forever!!!!!.....

# THE LOCUS OF CONTROL AND DECISION MAKING IN EDUCATIONAL RESEARCH MANAGEMENT: AN EXTERNAL VIEWPOINT

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# THE LOCUS OF CONTROL AND DECISION-MAKING IN EDUCATIONAL RESEARCH MANAGEMENT: AN EXTERNAL VIEWPOINT

Let me start out stating my position point blank. The locus of control and decision making for educational research management should shift dramatically. A very substantial portion of such decision making should come to rest wherever institutional responsibility for delivering educational services rests. The shift, in other words, should place very substantially greater power and responsibility in the hands of school and university department heads, principals, deans, superintendents, school boards, college and university presidents, trustees, and legislative committees responsible for educational policy and management.

Three reasons lead me to this conclusion. The first may be presented in a series of linked propositions.

1. The goal of educational research is the improvement of educational services to achieve learning and educational objectives better.

2. Improvement won't come about until better practices are identified or built and, thus being available, are used.

3. Improvements won't be used until they're sought.

4. Improvements won't be sought until the need is felt.

5. The need won't be felt until it's internalized by educational institutions and the professionals in them.

6. That won't happen until there is widespread diagnostic recognition of the discrepancies between accomplishments and objectives, recognition that is perceived in sufficient detail to identify where things might be done differently.

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In other words, until those who are viewed as the users or consumers of research are transformed into active, self-initiating seekers, neither the amount, quality, or character of edcuational research will be sufficient to the goal of improvement identified at the outset of this little logical chain. Turning educational managers into inquirers should transform them into seekers.

A second reason I've adopted this proposition is that something has to be done structurally to counter the inability of the bulk of the research and development community to recognize that their preoccupation with methodologies slavishly copied from the natural and mathematical sciences does violence to the essential political and moral character of social science research (of which educational research is surely a part). By shifting a major portion of research control to the institutions responsible for delivering educational services and therefore in the direction of the practical, politically-rich context of the actual process of education and learning, it will no longer be possible to ignore the centrality of the political dimension in all facets of edcuational research.

A third and very pragmatic reason is that with each passing year, despite the best intentions of those responsible, we have seen heaped one on top of the other management disaster after management disaster culminating only weeks ago in the most serious of all, the 30 per cent reduction in the budget of the fledging National Institute of Education.

Before we rescue ourselves from the sinkhole in which we find ourselves, research managers in the educational research field are going to have to come to two kinds of understandings. When they do they will find the clues which will press the whole enterprise forward in a productive

fashion and thereby secure the kind of legislative support that has been so miserably squandered. The first understanding is how the existing incentive structures will provide keys to the kinds of research and development which will gain widespread practitioner, and, therefore, political support. The second understanding, complex and largely unexplored, is the political nature of the content and processes of educational research.

Let me turn to institutional incentives first. What all of us in schools, colleges, and universities know is that they are extremely resistant to change and improvement as currently structured.

Of course, there are sound social reasons for that. For centuries schools at all levels were instruments by which culture was saved and transmitted on to succeeding generations. It is only in the last century or so that the school has actually become an instrument for social and technological change and that therefore governmental and political groups have sought to utilize educational institutions as change instruments rather than stability instruments.

The essential stabilizing influence of schools on society and culture, I would submit, however, is more of an accident of their structure than any deliberate success in achieving their objectives. The so-called "egg-crate" model which exists assures the practical isolation of the professionals from one another. The operational reality of schools as transmitters of culture and knowledge rather than facilitators of learning does not encourage a diagnostic posture to our functions, responsibilities, and accomplishments. And now we see widespread public dissatisfaction with the accomplishments and effectiveness of schools reducing

or squeezing resources. This squeeze makes it difficult to add an inquiry function to the existing school and college managerial repertoire which would help untrack current practices and structures and lead to the development of more usefully fluid ones.

It is one thing, however, to sit in Washington and view schools and colleges. It is still another to sit in a research center or laboratory or university faculty office. But it is an absolute shock to sit in a principal's office or a dean's chair and confront the gut questions of institutional and instructional reform.

Let me share with you some reactions and realizations now that I've spent nearly two years serving as an education dean following a six year experience in charge of planning and evaluating educational research.

What impresses me from my vantage point is how limited the actual usefulness of the work being done in educational research is. I choose my words carefully, because it's not that it's valueless or ineffective or of low quality intellectually speaking, but that it is so difficult to "sell" or get anyone to look at. In the reasons why this is so lie important lessons for research managers.

The first thing it's necessary to understand is that teachers and administrators at all levels of schooling are busy just keeping their heads above water. We try to carry out our responsibilities under very great constraints. To ask us to add a new function (seek out better practices, for example) becomes an intolerable burden. I know, I'm dean of a college which committed itself to top-to-bottom redesign, and the institutional, emotional, and personal strains are awesome. Good people, intelligent, capable, yet tearing their hair out!

As a consequence of the absence of a self-inquiry capability educators have little data about the resources at our command, the way in which they're used on the site in question, and the actual effects that resource use has on the production of desired outcomes. For example, I know more than a little about the concept of program budgeting, a management technique designed to render more rational the processes by which goals are identified, alternative programs devised to achieve those goals, and resources budgeted to implement programs. We played with the application of program budgeting technique in Washington when I was there, but trying to get handles on the forty-five or so programs operating in my college has been a challenge indeed.

It is a cliche in policy circles that education has been assessed in terms of inputs rather than outputs. While this has been true, the cliche has proven dangerous to the extent that it has drawn attention away from the desperate need to address ourselves with much greater sophistication and precision to the identification of manipulable microcosmic input quantities or variables at the building, departmental, or actual instructional level. Pupil-teacher ratio, for example, is a common input measure which turns out, except for political purposes, to be largely meaningless in actual instructional terms. Dividing one's time up into categories in which effort is expended is an approach to input calculation which is more useful but still misses other potential demands on faculty or administrators that can be indicated by such variables as number of advisees, doctoral committees served on, building - or district - or campus-wide committees served on, and so on. Such indicators represent potential demands against professional time and say something about the psychological framework within which a professional may be operating.

Why do I dwell on these concerns? Because there's not much sense in talking in the abstract about the general improvement of education without attending to the concrete realities of the structures as they are and the incentive systems within which we all currently operate. Much more needs to be known here and I do not refer here to researchers knowing, but rather deans, principals, department heads, superintendents, and faculty. What they need to know in much greater detail is what they are doing, how they are doing, it, and with what result. In short, the great need is for operations research, ongoing, suffusing the system in all its parts, and linking back to where decisions are being made about the character, quality, and amount of various kinds of budgeted resources.

This kind of information is prerequisite to change in education. Without it choices to do something different will be difficult to make on rational grounds. Without it, therefore, an essential assumption upon which research and development in education rests cannot be satisfied.

Let me turn now to the second concern, the intrinsic political character of the behavioral and social sciences. I have addressed this point before.* It is certainly not something unknown in the field or a personal idiosyncracy. It does seem to be something that the current research management community has a very difficult time internalizing.

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*See, for example, my "Research and Development for Education: A Market Model" in Volume III of the Oregon Studies - Research, Development, Diffusion, Evaluation, Janury, 1972 and my submission to the National Science Policy hearings in the summer of 1970 before the Subcommittee on Science, Research, and Development of the Committee on Science and Astronautics of the U.S. House of Representatives, National Science Policy (H. Con. Res. 666), No. 23, Washington, 1970, pp. 571-590.

Inquiry in the behavioral and social sciences is different from the natural sciences. The differences can be presented in a variety of ways. First, and foremost, there is no way that such inquiry can be divorced from the central concerns referenced by such terms as ethics, morality, and politics. It's not just that virtually everything that might be done in our field is susceptible to differing interpretations depending upon your value premises. It's not just that frequently the objects of study and concern are entire human organisms that are fully capable of exercising freely their own will and choice in a situation and thus consciously participate in the inquiry whether we as researchers want them to or not. It's not just that the techniques of research used bias the results, that the nature of inquiry and methodology are not innocent. It's not just that belief functions at least as effectively in behavioral and social domains as knowledge (e.g. if I believe you've done me in, the fact that you haven't doesn't alter our situation much). It's not just that we know these things, but that we must explore their implications and carry out our inquiry and research for education accordingly. In short, it is all of these things and more.

Suppose that those in this country most centrally responsible for research management decided tomorrow they would operate their programs on the basis of these kinds of understandings. What would be different?

Sooner or later a proposal would be made and implemented to distribute research funds to operating educational agencies. This would occur for two reasons. Greater attentiveness to the unique characteristics of the social and behavioral sciences would lead to the realization that

if disciplined inquiry is to be the basis for the improvement of education the focus of attention needs to be not the change but the prospective changer, not the adoption but the adopter, not so much on what occurs during and after visible change appears, but what occurs before anything is apparent at all. Focusing on operations research is one way of getting at this.

There is a second reason. The application of behavioral and social science knowledge is not just a quantitatively different phenomenon or more complex than the application of natural or biological science. It is different in kind.

In the latter domains knowledge seeks the generalizable law, and by the systematic control of extraneous phenomena attempts to produce results, which owing to their grounding in physical, chemical, or biological law, consistently produce the desired results. In society and culture, however, every situation is different. In only the most totalitarian or autocratic societies is the external control of "extraneous" variables even contemplated and history tells us without any hope of longterm success. The fact is, humanity is just too diverse, too willful, and I believe in the long run too intelligent and irrepressible to be treated in such fashion. In any case, all of the above is irrelevant because people just don't put up with the idea of being fit into generalized molds.

In our field rather than seek the generally applicable, we search for the specifically applicable. While we may look for general laws, the proposition might well be stated that the more basic, abstract, or general the law of human or social behavior the less applicable to any immediate human purpose it is. If we are not seeking knowledge for its own sake,

therefore, but because we have some instrumental purpose in mind, then we must learn to address the implications of seeking the kind of knowledge applicable to specific situations, where idiosyncratic people, behaviors, and institutions are striving to achieve whatever ends they may happen to hold.

Thus we encounter a reinforcement of the desirability of operations research as a prime candidate for continuous support. Always site-and purpose-specific and focusing on ongoing processes which may produce demands for change, operations research in our field is done on behalf of those who make decisions pertaining to the actual delivery of educational services, not on behalf of researchers or grand and glorious policy types!

This analysis is certain to raise two kinds of objections. The first is that it looks like an argument against the development of products. On the contrary, if better curricula, instructional techniques, or devices can be created based on improved understandings of learning and the social organization of schools which can then be somehow placed in the marketplace for possible adoption, such activity fits quite nicely into the analysis. We do know some things and better practices can be built on that knowledge, but the user is the chooser and the point I make elsewhere about the involvement of the consumer is not only preserved but quite explicitly expressed.

The second charge that might be raised is that it is an anti-intellectual argument. It may well be, but it is hardly anti-intelligent. I subscribe to a very pragmatic view of what knowledge is. The issue for me is not whether a position is anti-intellectual but whether in this case

it contributes to the improvement of education and learning. In effect, my response to any possible charge of anti-intellectualism is to demand evidence that the views judged intellectually respectable have greater efficacy.

What would emerge would be some kind of formula-grant support program to all types of educational institutions and agencies for the purposes of conducting inquiry bearing directly on the decisions those institutions and agencies are being called upon to make.

This means, of course, that the educational research community will have finally given its "women" equal rights and the vote.

Enfranchising practitioners in educational research policy will be a bitter pill for many to swallow, I suspect. The fears privately expressed in the research community and in Washington about what this will do to the quality of research need to be addressed by us. What is really being said here? What kinds of attitudes underlie such a judgment? What subtle but substantial effects do such attitudes have on the relations between R & D community and the schools?

It's not just the scientists either. Only a few years ago officials in what was then the Bureau of the Budget refused to release appropriations for vocational research because the money was to be distributed to the states on a formula basis. The objection of the BOB officials was that research talent was unevenly distributed and the funds would be wasted. If there was ever a self-fulfilling prophecy, this is one!

Even today, the three programs which appear to receive shortest shrift in NIE, not only by internal testimony but in the eyes of the Congress, are precisely those programs -- Montana, D.C. demonstration, and experimental schools -- which are geographically sited by their very

nature. The irony, of course, is that these programs are very obviously the ones that have political clout. The sponsoring agency, however, instead of capitalizing on that support, I suspect partly because of the premises about quality science they carry around in their heads, instead persists in behavior which under the present circumstances appears indistinguishable from hara kiri.

A second change we would see in NIE would be the soft-pedaling of programs which appear to serve the interests of researchers only. In view of all the above one can understand how odd it appears to me that the one new program which has received widespread publicity and for which NIE is "known" is the field-initiated (read "university researcher initiated") program. Research programs will never be sold to the Congress on the basis of claims that researchers need support. They will be sold because practitioners perceive or demand some benefit. To concentrate on pleasing labor at the expense of the consumer would not be possible if highest level research managers really understood the character of social science research and its true purposes.

A third innovation we'd see would be the holding of public hearings around the country to develop research agendas, hearings that would go out of their way to ask practitioners, students, parents, and local policy types, as well as research and development personnel, to participate. This would not be expensive though it would be time-consuming.

If what we are in is a political process as much as an inquiry process, then we should be using or adapting political decision models. Legislative committees use the hearing process. Why not research management? And while we're being political in the broader national constituency,

the research managers should pay close attention and indeed cultivate the political managers per se. That cultivation has to be face to face, patient, a communicative two-way process, and it needs to go on all the time, not just at appropriation time.

A fourth sign that the kinds of understanding I'm talking about was finding root in Washington would be the willingness to let the formula grant funds distributed for educational inquiry be used first for on-the-job training. We need help out here in the field to know what kinds of questions to ask, how to ask them, and how to go about getting sensible answers. I do not refer here only to training in measurement, statistics, or research design. I refer here to the full range of inquiry techniques available to social and behavioral scientists - case studies, good journalism, historical techniques, techniques of self-inquiry, diagnostic inquiry, maybe even psychoanalytic techniques on occasion. If the capability of an agency, which recognizes its widespread institutional needs and its political character is to be improved, it must undertake substantial repair at all levels and within all functions.

A fifth change would be the gradual development of a network of specialized research and development agencies closely linked in partnership to operating educational agencies. Such linkage could not practically be with all local or state agencies but clearly should be with some. Sound familiar? The regional educational laboratory concept was not killed by Congress. It was killed by elitist policy analysts in Washington who thought they knew better, and who instead of pressing USOE to make the institutions successes persisted in pulling the programs up by their roots every ten months to see whether they conformed to the

standards of research as defined at Harvard, Stanford, Chicago, Berkeley, or Illinois. I don't make that comment to be hostile or critical of these five leading institutions, but rather to illustrate what the standard was and to suggest that its application was inappropriate because it was only one standard, because the people applying it didn't comprehend fully what they were doing, and because it was so badly mistaken given the true nature of the educational research enterprise and its purposes. USOE's failure to realize the initial purposes of the laboratory program may not be fairly laid at the feet of those who were directly responsible for managing the program. We weren't perfect managers to be sure, but prime responsibility for our inability to carry through on the promises we started with are more properly laid at the feet of a few, highly influential staff officials in HEW and various staff offices of the White House who persisted in applying models, standards, and criteria which simply did not and do not reflect the political realities and purposes of the enterprise. My point here is that to support the developing inquiry capabilities that schools need for understanding educational R & D, we need to build up understanding by colleges and other educational agencies as well.

A sixth manifestation of the changed perspective would be evidenced in the kinds of research supported and the ways in which it was carried out. We would see much more of what I would call multiple-perspective kinds of inquiry. Take change process research as an example. It cries out for being done from the points of view of many different people. There are those who want certain kinds of changes and those who want others. There are those who will be responsible for carrying out the

necessary skills for undertaking it, and then finally those who will have to change. There are those who build the changes or design them for the first time. There are those who find themselves become, or who by their own initiative are, accountable for the changes and their primary, secondary, and tertirary results. There are those who are the presumed beneficiaries of the change. These are different perspectives, sometimes radically different, and social science research conducted under the premises I have been extolling in this paper would legitimize and enfranchise inquiry from all these perspectives.

The importance of multiple perspective inquiry may be underscored by drawing an analogy with the concern now properly being expressed by HEW for the protection of human subjects. In social science research we all hold our own values. Many values may be shared but many others may not. By assuring all stakeholders access to the tools of inquiry we increase the likelihood that their values and interests are protected and that for the necessary political choices which have to be made when power and goods and social benefits are distributed, we are all equally equipped for the dialog.

Administering research policy with due concern for multiple perspectives will not be easy and at first glance may well appear impossible. Consulting with all the people affected by a given research effort to assure their interests are confronted and if possible accommodated will not be easy. But no one ever said managing research was an easy task.

I would predict a considerable de-emphasis on survey research. (We might well see more polling take place, however). I'd see the de-emphasis

for two reasons. The first is that practitioners and decision-makers find it so unconvincing as a guide to action. The second, more important reason, is that survey research tends to reinforce the status quo by amplifying correlations in the present at the expense of attending to what might be. Too often the practical result of survey research has been reinforcement of precisely those positions even the researchers, had anyone asked them, would wish to have had rejected.

If we could expect a lessened proportion of survey research then we could also expect to see an increase in what might be called developmental inquiry. I am using the term here to characterize research which would begin from explicitly stated goals and value premises and where the inquiry was directional in character modifying as it goes along even to the point of abandoning the task if the intended value and objectives proved undersirable, unworkable, or unachievable. We might expect to see much more careful attention paid not only in this kind of research but all that was supported under educational R & D auspices, to the presentation before the conduct of any given inquiry, of social and educational environmental impact statements much like EPA now requires, but where the assessment of impact would be in terms of whose stakes might be enhanced and whose diminished as a consequence of the research being done. Survey research would still be conducted, to be sure, but the purpose would be more clearly diagnostic in character, clue seeking, aimed at identifying the exceptional cases for further study and using different techniques to try and ascertain why things happened in certain settings that others may wish to achieve or avoid. Finally, we would see more attention paid

to the development of case study materials and, as an R & D product in its own right, a renewed emphasis on the development of site-specific inquiry techniques to improve educational management and decision-making.

In summary, let me reiterate my answer to the question where the locus of control and decision-making for educational research should be. Half or more should be in schools, colleges, universities, state educational agencies, and other agencies as the deliverers of educational services. And all such decision-making, whether in the operating institutions, the prime educational research agency in Washington, in specialized R & D institutions throughout the country, or in the minds of individual researchers and developers as they prepare unsolicited proposals to granting agencies, needs to recognize and understand the profound implications of the political character of educational research and development.

(Addenda: Since drafting this paper a major analysis prepared in the National Institute of Education bearing on the development of the research and development system has been shared with me. What it indicates is that major s rides have been made in the direction of attending to consumer and market interests and needs. This is good to see. It would be remiss of me, however, not to note that the unique character of the behavioral and social sciences has yet to influence NIE's analysis on the R & D system in other respects, so there is still progress to be made. The efforts in the right direction should nevertheless be applauded.)

# WHAT DOES RESEARCH SAY ABOUT GETTING INNOVATIONS INTO SCHOOLS?

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## WHAT DOES RESEARCH SAY ABOUT GETTING INNOVATIONS INTO SCHOOLS?

The problem delineated for symposium consideration was what research tells us about getting innovations in schools. The interaction between researchers, developers and practitioners provided the opportunity to pool disciplinary and experiential resources for consideration of this question. As might be expected, the papers and discussions did not provide definitive answers for charting a single course for future innovation attempts. They did, however, identify various approaches to innovation, examine strengths and weaknesses of these approaches, and consider some criteria for judging the success of these attempts.

In retrospect, it appears that one means of unifying the diverse issues considered might be the pursuit of a model which focuses greater attention on the target of the innovation - the school system itself. Each school system represents a complex arrangement of characteristics, resources and forces. While each system is unique, there appear to be some general indicators of the levels of system functioning. Some school systems are consistently on the brink of chaos and represent the most difficult situations for innovations. Other systems seem to be operating at consistently high levels of functioning. It is only through explicit consideration of the levels of system functioning and the requirements of the specific school system that a strategy for innovation can be developed.

This paper is directed at outlining one way of thinking about the innovation needs of schools, suggesting a strategy for parallel innovations, and selecting the steps that would be most needed in furthering the cause of innovation in schools.

Levels of School Functioning

One of the most basic questions in the consideration of innovations in schools is that of determining the most effective innovation for a specific school system. Many of the efforts for innovation seem to be motivated out of the innovator's need to test a method or strategy rather than a realistic appraisal of needs and problems facing a school system at a given point in time. If a framework for needs assessment can be established, the difficult problem of matching innovations with the needs of school districts can be resolved to improve the effectiveness of innovation.

The paper presented by Havelock during the symposium would appear to offer the beginnings of such a framework. In a sampling of school district superintendents, participants rated the variables that were essential for successful innovation. These ratings were then factor analyzed and four factors were obtained. A review of these factors suggests that it is possible to construct a hierarchy from which to view the level of functioning of schools. The hierarchy reflects the resources presently available within the school district and it implicitly suggests developmental needs of the school system. These can be matched to the various approaches to innovation that would offer the most potential for a school system at a given stage of development.

The first factor identified by the researchers was labeled "participative problem solving", and it was represented by four items:

Maximizing chances of participation by many groups

Finding shared values as a basis for working

Providing a climate conducive to sharing ideas

Stressing self-help by the users of the innovation

These variables may be interpreted to represent basic environmental attributes that contribute to a basic level of stability in the school system and a degree of interpersonal trust among involved individuals. No organization can operate without some basic agreement to work together and a willingness to assume the good will of others. School systems that are facing student boycotts, student violence, teacher strikes, community opposition and a host of other conditions that mitigate against basic stability cannot profit from innovations directed to higher level needs. The focus of any innovation should be on ways of increasing the stability of the system and the basic interpersonal competencies of persons operating in the system. Sociological approaches to innovation in the system may have the most to offer school systems that are presently at this stage of development. The skills to be emphasized in any innovation at this level would be those of crisis identification and crisis management. These would be crucial until a level of stability and trust could be established within the system.

A second level of system development emerges from the second factor derived in the Havelock study. This factor, labeled "R and D philosophy" consisted of:

Systematic evaluation

Solid research base

Systematic planning

Adequate definition of objectives

These items seem to identify the quality of task accomplishment and the professional competencies of personnel operating in the school system. Important

as these professional competencies are for quality educational practice, there is considerable evidence that these competencies cannot have a high level of impact in those systems where the environmental conditions represented in the first factor are missing.

The shortage of these professional competencies can be seen at every level of the operation of school systems -- in school administration, in building management, in instructional services, and in comprehensive policy making. The nature of the educational profession has placed emphasis on the content of instruction transmitted, but little attention has been given to specification and systematic training of the competencies required for effective delivery of instructional services. If school systems are to move ahead, these competencies must be strengthened. It is at this level of development that systems approaches or research and development approaches can have their greatest impact on schools.

A limiting factor of many of the "R and D" efforts for innovations has been their emphasis on the products without a similar emphasis on the human development necessary for delivery of the product. Quality programs aimed at strengthening delivery skills needed in administration, management and in the classroom must receive priority for innovation for school systems at this stage of development.

The third factor identified in Havelock's research was labeled by the researchers "strategic manipulation," but might be renamed as "political expertise." The items included in the factor were:

Participation by key community leaders

Taking advantage of crisis situations

Involvement of informal leaders of opinion inside the schools

The significance of this element of school functioning was reinforced throughout the symposium. Miller's paper discussed the naivete of educators with respect to the fact that important educational policy decisions are based more on political than educational factors. Pierce's and Watson's papers and comments elaborated upon this issue and made it clear that few persons in the educational research and development community have been aware of the range of political pressures at the national, state and local levels of government that affect schools. It must be pointed out that political factors increase in importance when the level of professional competencies is low. When professional skills of planning, programming, evaluation, and development of objectives are missing; decision making is more likely to be influenced by political factors operating outside the school system. While this may result in positive actions in many instances, these factors frequently do not exert the sustained effort necessary to provide a consistent leadership for schools.

Even when favorable environmental and professional skills exist in school systems, innovations may fail due to inattention to political issues and concerns. These political concerns relate primarily to the organization of power relationships both within and outside the school system that are relevant to the effective operation of the school.

The importance of political pressures outside the daily operation of schools is evident within our current experience. Much of the innovation that is found in schools today has resulted from the discontent of minority groups and parents desiring educational options for children. Schools have not, for the most part, considered and provided an adequate response for issues that are of importance to the society. In the future, schools are going to be forced to become more

sensitive to the needs of communities if they are to survive.

A second configuration of power relationships that is frequently overlooked are those within the school system. The relationships among the central office staff, building managers, and teachers represent crucial factors in the success of most innovations. The involvement of users in the planning of innovations that will effect their performance of duties remains one of the most basic problems for the acceptance of innovations. Administrators, managers and teachers need to develop competencies in involving users in ways that enlist their cooperation and provide them the support needed for implementation of the innovation.

At this stage of development, political approaches to innovation should focus on providing schools with the skills to understand and deal with external and internal power relationships.

The last factor cited in the Havelock study was labeled "open advocacy and human revolution." The items in this cluster were:

Confrontation of differences

Resolution of interpersonal conflicts

Creating an awareness of alternative solutions

Providing a climate conducive to risk-taking

These items would seem to point up the critical variables essential for self-renewal and continuing development of schools. They represent problem identification and problem solving skills and require a relatively high level of sophistication and experience. Important as these variables may be, they may not be functional in school systems if the other more basic competencies do not

exist. The administrator who provides a climate of risk taking when it is not supported by professional competency may weaken the system. Efforts to provide innovations directed at the development of such a climate should only be undertaken if evidence is available that the environmental, professional and political factors are operating at high levels. These problem identification and problem solving skills are in one sense basic; in another sense, they remain the ultimate innovations for schools. Providing problem solving capability to school systems represents the final stage of installation of innovation capability -- the transmission of the ability to maintain the innovation within the school system itself.

The human relations approach that is based on skill development is probably the most logical approach for a school system at this stage of development.

Need for Parallel Innovations

In the studies of innovation presented during the symposium two characteristics of successful innovations were identified. Programs with limited, specific objectives and programs which did not require basic restructuring of the existing system tended to be retained by school systems when funds were withdrawn. The untested question in these innovation attempts is whether the innovations resulted in substantial differences in the quality or effectiveness of educational services.

If innovations are to be effective in achieving a greater degree of change in systems, more attention will have to be given to parallel actions which can increase the likelihood of success. This would suggest that the full implications of any innovation must be carefully considered and incorporated into any change effort.

For example, an innovation related to increasing the instructional skills of

teachers may not succeed and may instead create dysfunctional behavior if principals and supervisory personnel are not provided with complementary skills. Parallel innovations provide a network of support and reinforcement throughout the school system. One formulation of a plan for parallel innovations among three key groups within the system is given in Figure 1.

This formulation outlines parallel innovations needed by system personnel operating within various levels of system development. Similar examples could be developed for delineating content of innovations in a more specific way.

HIERARCHY OF INNOVATIONS AND EXAMPLE OF PARALLEL INNOVATIONS FOR SYSTEM PERSONNEL

| Levels of Innovation | Superintendent Competencies | Principal Competencies | Teacher Competencies |
|---|---|---|---|
| 1. Environmental Factors | System Stability<br>-Crisis identification<br>-Crisis control | School Stability<br>-Knowledge of community<br>-Ability to relate to community | Classroom Stability<br>-Knowledge of students<br>-Respect for students |
| | Interpersonal Skills | Interpersonal Skills | Interpersonal Skills |
| 2. Professional Competencies | Definition of system goals and objectives<br>Planning<br>Resource procurement and allocation<br>Evaluation | Definition of school goals<br>Planning<br>Resource procurement<br>Management of resources and program<br>School and personnel evaluation | Definition of Instructional objectives<br>Instructional technology<br>Student diagnosis and evaluation |
| 3. Political Expertise | Relationship with community power groups | Relationships with parents | Relationships with administration |
| | Interpretation of needs to community | Interpretation of program to parents | Interpretation of needs to administration |
| | Communication and involvement skills | Communication and involvement | |
| | Relationships within the school system<br>-Assessment of needs<br>-Interpretation of system mission<br>-Communication and involvement skills | Relationships within the school<br>-Accessibility to groups<br>-Communication and involvement skills | Relationships within the staff<br>Relationships with parents/students |

| Levels of Innovation | Superintendent Competencies | Principal Competencies | Teacher Competencies |
|---|---|---|---|
| 4.Self Renewal | Problem solving skills for system | Problem solving skills for school | Problem solving skills for classroom students |
| | -Problem identification and confrontation | -Problem identification and confrontation | Problem identification and confrontation |
| | -Identifying and selecting alternatives | -Identifying and selecting alternatives | -Identifying and selecting alternatives |
| | -Resolving conflicts | -Resolving conflicts | -Resolving conflicts |
| | -Monitoring system | -Monitoring school | -Monitoring classrooms and student progress |
| | | | Problem solving skills for students |

What are the Next Steps?

Throughout the symposium numerous suggestions were made for moving ahead the state of the art of innovation in schools. Some of the critical steps at this point in time would be:

1. Formulation of a Plan for Coordination of Educational Research and Development and Dissemination Efforts

   The past ten years have seen improvement in the identification of research and development programs and their installation within school systems. Many effective products are now being used successfully in schools. The unanswered problem, however, is the degree to which these efforts meet the critical needs of schools and truly increase the delivery of effective educational services. There is need for a national strategy of systematic testing of innovation efforts against the developmental levels of schools. This should include codification of present innovation efforts, evaluation of successful innovations from the role perspectives of key groups within the system, delineation of innovation competencies, and the identification of needed programs of research and demonstration.

2. Restructuring of Educational Technical Assistance Resources

   Local school systems are frequently a prime example of the persons caught "in the middle." The local administrator faces the problems of meeting the needs of the schools, and having little access to the necessary resources for meeting these needs. These resources are not only financial; they are also the professional skills needed by schools. Access to information, consultation and technical assistance

are critical needs for all levels of local school personnel. One method for providing this need would be the development of an educational extension service similar to the system that has served agriculture. A cooperative state-federal extension program could improve the practice and the research and development of the profession.

3. Restructuring of the Education Profession

The systems that are most likely to innovate are those with more pupils and greater financial expenditures for education. The greater resources of the larger systems provide the ability to attract and retain better qualified personnel and to provide greater role specialization in the delivery of educational services. The number of systems with this capability, however, is relatively limited. The continuing problem for most school systems is the need for providing specialized services to children and maintaining career ladders that will continue to attract and retain the most competent personnel.

There is need for restructuring the delivery of educational services. At one level, paraprofessional services are needed to relate the school to the community, provide additional options for children, and increase the individualization of instruction. At another level, practitioners need supportive services and opportunities to continue their personal growth and development. Instructional staff should be provided opportunities for movement

into curriculum development, counseling and interpersonal relationships, research, and in-service training for teachers. Only when the school system has access to specialized services and individual educators have opportunities to learn the range of professional competencies needed in education can a system be self-renewing and maximally innovating.

The future of innovation in schools is uncertain at best. It cannot be denied that there is a growing disenchantment with the pay-off that has been realized from present and past efforts. It would be a fatal mistake to discard the experience that has been accumulated. If priorities are given to the development of a coordinated effort and if adequate resources are allocated for taking the necessary steps in solving the competency crisis, schools can fulfill the promise that our society holds for them.

# A MATTER OF LINKAGE: HOW CAN INNOVATION RESEARCH AND INNOVATION PRACTICE INFLUENCE EACH OTHER?

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# A MATTER OF LINKAGE: HOW CAN INNOVATION RESEARCH AND INNOVATION PRACTICE INFLUENCE EACH OTHER?

What does research say about getting innovations into schools? Depending on one's vantage point, the answer may be an Einsteinian "We know nothing," an administrator's "Nothing that I don't already know from experience," or an innovation researcher's "about 300 per cent more than what gets acted on." I was very much impressed at the symposium by the depth and extent of what can only be called linkage difficulties along the two-way chain of knowledge utilization between user and researcher. These difficulties seem even more formidable than usual, somehow, when the knowledge being generated and utilized has to do with innovation processes, rather than with the efficacy of some particular educational practice.

A few instances. (1) Watson's paper reviews Havelock's RD&D, social interaction, and problem-solving models---then walks away as if the rather ingeniously-synthesized "linkage" model had never been constructed. (2) Miller's paper discusses the importance of "climate" for change, as if innovativeness studies done with the Halpin-Croft OCDQ, in the Cooperative Project for Educational Development, and at CASEA had never existed. (3) The "values" interest group which met on the second day of the symposium asserted that "beliefs are as efficacious as knowledge in the social domain," citing "Pygmalion effect" research as justification, as if the repeated failures to replicate Rosenthal's work (cf. Mendels and Flanders, 1973) had never occurred. (4) Baldridge's paper asserts the

primary issue to be that organizations, not individuals, are adopters, and claims that organizational complexity is the main predictor of innovativeness. But a recent book on this very topic (Zaltman, Duncan and Halbek, 1973), which reviews a good deal of empirical evidence showing that complexity is positively associated with higher adoption rates, but negatively associated with implementation rates, is not mentioned. (5) Several papers (Pierce, Watson, Baldridge), and innumerable discussions in and out of conference discussions, showed a pervasive tendency to confuse research on innovation processes with research aimed at evaluating educational innovations' impact, sometimes claiming that evaluation research was (or "should be") the ultimate basis for adoption and implementation. Yet there is little innovation research to support the claim that hard evaluation data lead to adoption or implementation, and (in passing) I believe the exhortations to users along that line are both hollow and energy-wasting. (6) As a person perennially interested in conceptualizing innovation processes, I had a recurrent sense during the symposium of being very far away from the daily operating realities of schools, of needing much better linkage between my ideas and what school people are up against. (7) The paper (Havelock's) with the strongest empirical base and the best operationalization of prior work on innovation processes was somehow minimized in symposium discussions, as if the superintendents involved could not be trusted to give reasonable reports, or the discovered "invisibility" of R&D agencies was not real, or the participation findings were based only on rhetoric. Yet (a) this study has more, and better-sampled, data than we have seen in many years; (b) its findings make theoretical sense; (c) they correspond with others'

empirical findings (e.g., the resource use finding fits with that of Baldridge).

I do not wish to be tendentious, or to locate the inevitable holes in the papers I've mentioned. The issue is more one of inadequate or missing linkage between different stakeholders in the educational innovation arena. The innovation researcher is a little like the arachnidologist who was asked, "What good are spiders?", and responded thoughtfully, "I'll tell you what good they are. They're damned interesting, that's what." His or her prime interest lies in the examination of puzzling and intricate processes, in making sense of them, in building coherence. In some senses, it may be nearly as productive to study the adoption and implementation of an innovation with ambiguous or even pernicious effects as to study one that is "proven." But out on the other end of the utilization chain, school people as users are far more preoccupied with such matters as whether the innovation will "really help kids," whether the claims for its efficacy can be trusted, whether "the community" will hold still for it, how much risk there is, and how much training people will need to use it. School people, like innovation researchers, have their own theories of innovation process. Some are indubitably wise and effective---innovations do happen vigorously, as Havelock's data show (the rates per district are three to five times as great as those found by Brickell in New York State in the late 50's). But some personal theories of innovation are simplistic, self-serving or tautological ("good management is the key," "people have to be ready," "we moved too fast," "the bureaucracy absorbs it," "it was too complicated").

Finally, we have developers, people working in linking institutions--

of which R&D centers are a prime example. They are faced with having to translate and utilize not only the innovation researchers' work (hence this symposium), but also knowledge about specific educational theories and practices; to locate acute areas of user need; and to develop workable educational products, using the knowledge, to fill the needs. Linking positions are by definition marginal, hence uncomfortable. That discomfort sometimes surfaces in R&D people's views that (a) not much is known, really, about educational innovation (this in the face of well-organized syntheses and 4,000-item bibliographies); (b) our products are good, because we developed them; (c) the primary issue is to get users, seen at the end of the R&D pipeline, to use them (because if they don't use them, then we won't be re-funded); the mistrust school people have, and the gap between urgent school needs and the products that actually get developed are only dimly seen, or explained away.

I am not simply surfacing here the old litanies about "theory and practice," or complaining about inadequate knowledge utilization in general terms.* The point is that linkage mechanisms and operations are, in my view, especially poor when it comes to knowledge which is specifically about the processes of educational change. There is, for example, an Educational Products Information Exchange. But when it comes to educational change processes, we seem more often than not to fall back on

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*See Short (1973) for an excellent and comprehensive review of work in this area.

bromides, rules of thumb, conceptualizations without a strong empirical case, or polemical jousting ("OD is ineffective because it is introspective," "People in the R&D business can't get their heads out of the pipeline model," "The systems technocrats are know-nothings").

In the remainder of these comments, I would like to address myself to several substantive issues in educational change: implementation, self renewal, and the nature and measurement of "innovation." It is clear from the symposium that these issues must be dealt with carefully and thoughtfully across the great linkage gaps I have sketched above. Since I am primarily an innovation researcher, my choice of issues and my treatment of them reflects the way the world looks from that particular ecological niche. But my comments are to be taken as a wish for more dialogue, more linkage, more ways in which I can be shown by other stakeholders to be thinking in a partial, distorted, role-bound fashion, more jointly-constructed models of how educational change works when it is working well, and working poorly.

In spite of repeated calls at the symposium for better understanding of implementation (the papers by Baldridge, and by Temkin, for example), it's of some interest that a small group did not materialize on this topic on the second day---just as the number of studies on this topic is relatively thin. One suspects that the problem is somehow too messy, complex, not as easily-examined as are initial decisions to adopt.

Implementation should, I think, be viewed in two ways. First, it is a process of supporting users, redesigning associated structures, and oiling the process of getting an innovation "in place." This concept appears in the Gross et al (1971) study (primarily by inference from what

was _not_ done to support implementation), and underlies the Temkin paper. Perhaps more crucially, though, I believe implementation should be viewed as _diffusion_ internal to school systems. Whether innovations are imported, or are locally designed, the question of spread from classroom to classroom and building to building within the local district is of prime importance. Otherwise the "building at a time" strategy will predominate, and large districts will report astronomical adoption rates simply because they have more buildings to try things in. Baldridge's paper suggests that "additional administrative support and middle-level management are needed to break down the insulation hindering the spread of innovation."

Perhaps, but some empirical evidence suggests that _normative_ regulation (Miles 1972) is more crucial. For example, in the COPED project (1970) we collected data showing that up to 75 percent of teachers had thought of innovations that might improve education in their districts outside their own classrooms, but that only half of the 75 percent had in fact talked with _anyone_ else about the innovations, and that only 5 percent reported that any action had ensued. Anti-collaborative norms can be inferred. More recently, Saturen (1972) discovered that in schools with norms favoring _variety_ (diversity) and _collaboration_, IF supportive OD training was supplied, innovativeness (as rated by teachers) was higher. The major impact of the training appeared to be on the actual _skills_ of collaboration; schools with norms favoring variety but _not_ collaboration, and which received training, showed low innovativeness.

There are other aspects of implementation which deserve a great deal more attention. How, as McCune said in her remarks at the symposium,

do we really empower the user -- in terms of vision, what might be called will, hope of success, and the skills needed? Here too there is a utilization gap: no one at the symposium mentioned the thorough, practical and comprehensive TRAINING FOR CHANGE AGENTS (Havelock and Havelock, 1973), or the useful A GUIDE TO INNOVATION IN EDUCATION (Havelock, 1970), or the detailed HANDBOOK OF ORGANIZATION DEVELOPMENT IN SCHOOLS (Schmuck et al, 1972). The skills involved in aiding educational innovation are not easily packageable, nor usable in a cookbook fashion. But they are reasonably well known, and good training technology is available.

We must also know more about how to choose the system properties (cf. discussion of self-renewal which follows) which need attention if implementation of any particular innovation is to be facilitated.

And just what is the role of key figures--principals, unit leaders, respected teachers, the crucial (according to Havelock's data) assistant superintendent? For implementation, is charisma important? Or is it enough simply to be high on Initiating Structure and Consideration?

Not least: what, beyond rhetoric, is the real minimal amount of "participation" essential for internal diffusion and adequate implementation? Of course it will vary with properties of the innovation and their intersection with existing user role definitions, satisfactions, and vested interests. But can some general---and useful--statements be made? The Saturen collaboration data suggest so.

Given my perspective, I have naturally raised more questions about these issues than I have answered. The point is that users, middlemen and researchers alike have agreed that we need to know much more than we

do about the theory--and the practice--of "implementation."

The concept of "Self-renewal" has fared somewhat better. Beginning with Gardner's use of the term as applied to organizations, and some early attempts to conceptualize it for educational systems (Miles and Lake 1967), there is reasonable consensus that we are talking about some institution-building, strengthening set of processes with a scope substantially beyond that of mere task accomplishment, "fire-fighting," or sheer institutional maintenance. At the symposium, Baldridge's paper alluded to self-renewal as a desirable goal, but suggested no operations to achieve it; Crandall attempted a model for the induction of self-renewal via the intervention of external change agents, as with the earlier COPED effort. The interest group on self-renewal worked ambitiously and thoughtfully, coming up with certain critical indicators (or perhaps prerequisites): strong improvement motivation, problem-seeking behavior, re-examination and alteration of <u>both</u> goals and means. But some of their products (e.g., "has good internal communication," "has clear goals," "is responsive to constituency demands") were not distinguishable from the properties of any effective, relatively stead-state organization. It is still far from clear what is necessary if an organization is to transcent short-run coping, and continuously redesign and improve itself--and even far from clear what we would regard as minimal indicators that such processes were taking place. Would we expect, for example that one percent or 10 percent or even more of the educational systems money, time, energy should be going into system-strengthening, redesigning operations? Even with such lack of clarity, we can be sure that thinking of educational

change in self-renewal terms is at some conceptual distance from even sophisticated views of the implementation and installation of any particular "innovation"--which would ordinarily be construed as an indicative episode in the life of a more or less self-renewing system.

The interest group's emphasis on the presence of structures (e.g., for planning, staff development, external linkage) and processes (e.g., evaluation, goal identification) was, I thought, useful. Much more work is needed along these lines--both conceptual and empirical. For example: how much money do school districts actually put into "in-service education?" This question is simple, but (it turns out) very, very difficult to answer (Miles 1973). Others: what sort of incentive or reward system would effectively reinforce and sustain "self-renewing" behaviors; how is "organization health" connected to self-renewal? What sort of modeling by key figures--charismatic or not--is essential? Most basically: is the very concept of self-renewal a sort of rhetorical will-o'-the-wisp, attractive in the abstract, but irrelevant and distractive from the main tasks faced in real school districts? Perhaps continuing incremental improvement, gradual adaptation to environmental press, and modest structural improvements are all that are reasonable. For some schools, it may well be enough to aim for increased current effectiveness (a sort of curative, facilitative stance), without the hope of building ever-more-stately mansions as the enterprise continues. (Yet if the chambered nautilus can do it, why not we?)

The final substantive issue, and one that recurs in many of the symposium papers, is that of the conceptualization and measurement of "innovation" itself. Pierce's paper leaves it undefined as a sort of primitive

term. Watson reviews past definitional efforts, but walks away from a final clarification. Temkin implicitly equates innovation with "product." Baldridge's Illinois study settles for administrator reports on the adoption of practices from a standard list, though other studies in progress look at documents and teacher reports. Havelock considers the innovation as product, as new practice, and as satisfier of user needs, then uses a measure asking superintendents to mention major improvement-oriented changes involving staff reorientation, resource reallocation, or adoption of new "practices, programs or technology." Even these latter, empirical definitions leave something to be desired: they rely excessively on superintendent claims; they use the district as the unit, thus potentially inflating the measure in large districts for reasons outlined earlier; they are silent on the thoroughness of implementation; and they give equal weight, presumably, to each change reported.

I should like to report the work done in the interest group which met at the symposium on this topic, because it was done jointly by people occupying the role of researcher, local practitioner, and developer. The results indicate some conceptual and measurement directions which may be useful in the immediate future.

We defined "innovation" as a specific means asserted by someone to be capable of accomplishing particular goal(s)--usually in a better, easier or cheaper way than at present--and viewed as new to the site or system involved (district, building or classroom). The core ideas in this definition are: (1) the innovation is instrumental to a goal or goals, is seen as a means; (2) it is new, not familiar to the immediate site; (3) a claim of relative advantage is being made.

This definition is deliberately silent on the source of the innovation. It may be imported from outside the site (or its immediately-surrounding system); it may have diffused from nearby sites (other buildings, other classrooms); or it may have been invented within the site. The definition is also purposefully silent on the directness or closeness of the innovation to changes in children: it may involve practices that have direct influence on learners, or it may involve organizational-level or adult-influencing changes that have an indirect effect--or perhaps no ascertainable effect--on children.

(When the group's work was reported to the closing general session, it was suggested that the element of willingness, deliberate choice, should also be included. Sometimes the choice may be between the old and a single new means--or several options may be considered. In this view, legally-mandated changes, which would apply to all districts in a jurisdiction, should not meaningfully be considered innovations. If, on the other hand, districts could make discriminably different choices of means to meet a legal requirement, then innovation, as stipulatively defined here, would be occurring.)

This basic conceptualization does not differ strikingly from previous formulations (e.g., Miles 1964). But the discussion of measurement aspects led to some operations which have not appeared in the innovation literature. Depending on who happens to be studying innovation, and for what purposes, it was considered that the following aspects needed to have metrics assigned to them:

1. Extensiveness of exposure: how many students parents, teachers, administrators, buildings are in principle "affectable," (i.e., actually exposed) right now? (This measure is analytically separate, of course, from the question of actual impact.)

2. Degree of implementation: is "fidelity" to the inventor's or developer's original requirements high or low?

3. Scope: is the innovation potentially trivial or basic for the learning/working lives of those exposed to it? Labels like engagement, involvement, relevance might be applied. The difference here is exemplified by the "scope" of a new math textbook as vs. the school's buying a gasoline station to be operated and managed by students. Or beginning a class with student name tags as vs. modular scheduling. Or adding some new courses as vs. creating an alternative school.*

4. Aggregate user satisfaction: What do most users (administrators, faculty, students, parents) feel, in terms of good-bad judgments, about the innovation? Without such data, we could have high "innovativeness" scores in settings where users, by fiat or other constraint, were adopting or implementing innovations they regarded as having no relative advantage.

5. Comparative effectiveness: Does the innovation in fact appear to accomplish claimed and desired goals? Does it do so no more expensively than the means it displaced? Are there no unwanted side effects?**

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*The symposium papers (except for Watson's) and discussions were largely empty of attention to alternative forms of education (Saxe, 1973): the "city as classroom," work experience programs, alternative schools. These involve substantially redesigned subsystems, with major transformations in ideology, assumptions about teaching and learning, role definitions---the lot. Do such inventions "diffuse," become "implemented" in the same way as product-type innovations? What organizational conditions are essential for their success and their spread into other units of the surrounding system?

**This variable is classically avoided by innovation researchers, who largely take efficacy for granted, but seems essential to measure if innovation is to result in school improvement. It doesn't seem possible (or rational) for school people to believe in (hence use) innovation research unless some effectiveness data are available---effectiveness data beyond those collected by developers, or even by other users.

As I indicated earlier, however, "hard data" are probably unrealistically expensive and difficult to collect on most innovations being advocated currently. My own position lies in the direction of encouraging users to provide a slight augmentation of data already collected and used informally: are children interested? do teachers and children feel happier? do students express more positive attitudes toward the subject matter, the classroom, to school in general? can we see signs of more energy, more creativeness in the daily life of the learner and the teacher? I am suggesting, for most innovations, a slightly more systematic reliance than at present on the judgments of interested parties, not analyses of covariance, control groups, and similar paraphernalia. Where solid measures exist, and districts have professional researchers, and the issues are really crucial (e.g., reading in urban schools; black children's sense of fate control) then we should evaluate elegantly. But not all the time.

Two aggregate measures seemed to the group to be essential, as well:

6. System size adjustment: At the district level, it seems important to generate ratios such as "innovations per building," "innovations per child," "innovations per professional staff member," to avoid artifacts stemming from size.

7. Internal diffusion rate: If the time dimension is added, then measures like those under #6 can be used to show movement of innovations within particular systems. Ex: proportion of all "eligible" adopters (kindergarten teachers, elementary principals, high school physical education teachers) who began using the innovation in successive time periods (semesters, years).

The measurement problems for some of these variables (e.g., scope) are not small. But using measures like these would give all users of innovation research (other researchers, linkers of all sorts, R&D personnel, and school people) more confidence that we knew exactly what is going on when a district or subsystem is characterized as "high-innovative." Only with such measures (and doubtless others we did not consider) will we be able to (a) assess the genuine diffusion potential of particular innovations in particular kinds of systems; (b) understand the consequences of particular adoption and implementation strategies; (c) satisfy ourselves that something beyond faddishness, self-serving announcements, or trivial movements in the "froth" of education are taking place.

To conclude: what do we need, then, if "research" is to help us understand -- and facilitate -- the way "innovations" get into schools? The answer from other fields of knowledge utilization is: we need linking roles and institutions. The RBS symposium was a temporary linking effort: in it, researchers developers, and school practitioners made the attempt to talk to each other, with intermittent success.

But two days' work and some post-conference writing only starts to attack the problems. Something more sustained and committed is necessary

if we want educational innovation to be informed by -- and to inform -- research on innovation processes. This is not a time when creating substantial new linking institutions is especially feasible. But experimental projects, run through existing institutions -- like CRUSK, RBS, or the Cleveland Public Schools, for example -- are workable. Here are some project ideas, which I hereby freely distribute to anyone with energy and interest. If my limited scanning and retrieval facilities have failed me, as is likely, and such projects now exist, marvelous. If not, they should be brought into being. For all of these, I advocate active interaction among users, linkers, and producers of innovation research.

1. User needs study. As is classically the case for practitioners, the consumers of research on educational innovation have not had very much to say about what they think the problems are. Users here include not only local school administrators, teachers, parents, students, but intermediate-level units, R&D organizations, state departments of education, and both private and public granting agencies. Users ought to have a chance to identify the sorts of needs relevant to innovation processes with which they need help.

2. Case studies of innovation. The CERI-OECD studies of educational change have been rather illuminating (CERI-OECD, n.d.). So have the close-up studies of field agents by Sieber et al (1972), and the recent CASEA collection (Charters et al, 1973). But all in all, we do not really have very good or very earthy information about how it all works, with real people in real schools. The "knowledge of acquaintance" that school people have doesn't diffuse, stays particularistic. The "general knowledge" of innovation processes that researchers have doesn't diffuse, but stays at arm's length, isn't nailed down. We need many more participant-observer studies--particularly of complex and systemically-influenced processes like "implementation."

3. Recurring national audits. The Havelock study reported at the symposium ought to be deepened (ex: by extending the measurement of innovation in ways suggested above) and carried out annually. A regular institutionalized measurement, with careful sampling, would, like the Gallup Poll, aid in national and state policy-making and give perspective to local efforts. It would

also enable easy and cheap data collection on specific, non-recurring issues of interest (ex: how many districts are considering some form of voucher plan; how much is being spent on teacher centers). As a rough parallel, note that NORC, because of its institutionalized sampling, interviewing, and data processing facilities, can supply national-sample answers to a question posed by any interested party for less than $250.

4. Assessment of change agent training and intervention. As suggested earlier, we now have the beginnings of reasonable curricula aimed at aiding external and internal change agents to function more effectively. But we do not really know what the graduates of such programs can deliver, or what the local consequences are. A relatively simple first step would be to track the graduates of programs using the Northwest lab's RUPS materials, Havelock's two training guides, the CASEA handbook, and other materials aimed at producing change agents. What did they do afterward, and was anything they did traceable to their training?

   A second step would focus on intervention effects, going far beyond the studies reported by Schmuck and Miles (1971), perhaps to something like the Institute for Social Research's long-term effort in twenty-three organizations (Bowers, 1973) to look at the results of such interventions as survey feedback, process consultation, and group training. And if particular change-agent styles or strategies are thus shown to be particularly useful in aiding adoption, implementation or (even) self-renewal, then a third step might cycle back to change agent training: how do we get people to be capable of delivering these strategies?

5. Experimental dissemination projects. Educational innovation is such a participative and complex process that conventional methods of diffusing knowledge about it (such as reports, bibliographies, even workbooks and training manuals) are inevitably watery and ineffectual. Projects using simulation games, programmed exercises (like the ED/AD/EX materials developed by Immegart at Rochester), documentary films (perhaps more like Fred Wiseman's than like I/D/E/A's), and something that might be called apprenticeships might be more productive, and almost certainly would be more fun.

I am not here simply trying to play the game of "needed research." Much more is at stake: the effective utilization of knowledge about educational innovation---now and in the immediate future--in a way that

confronts the acute problems of education in this country. Such utilization will only occur if we start reaching across the linkage gaps, and allow other stakeholders to alarm, surprise, and influence us rather specifically. Projects like these would be a start.

REFERENCES


Bowers, D. G. "OD Techniques and Their Results in 23 Organizations: The Michigan ICL Study." JOURNAL OF APPLIED BEHAVIORAL SCIENCE, 1973, 9 (1), 21-43.

CERI-OECD (Center for Educational Research and Innovation, Organization for Economic Cooperation and Development), STRATEGIES FOR EDUCATIONAL INNOVATION. Paris.

Charters, W. W., Everhart, R. B., Jones, J. E., Packard, J. S., Pellegrin, R. J., Reynolds, L. J., and Wacaster, C. T. THE PROCESS OF PLANNED CHANGE IN THE SCHOOL'S INSTRUCTIONAL ORGANIZATION. CASEA Monograph 25. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1973.

COPED (Cooperative Project for Educational Development). Final Report, COPED Data Analysis Project. Project No. 8-0069. Grant No. OEG-3-8-080069-0043 (010). Washington, D. C.: U. S. Office of Education, Vol. I, RESEARCH OUTCOMES, Vol. II, CASE STUDIES, Vol. III, DIAGNOSING THE PROFESSIONAL CLIMATE OF YOUR SCHOOL. Appendix, INSTRUMENTS AND CODE MANUAL.

Gross, N., Giacquinta, J. B., and Bernstein, M. IMPLEMENTING ORGANIZATIONAL INNOVATIONS. New York: Basic Books, 1971.

Havelock, R. A GUIDE TO INNOVATION IN EDUCATION. CRUSK, Institute for Social Research. Ann Arbor: University of Michigan, 1970.

Havelock, R., and Havelock, M. C. TRAINING FOR CHANGE AGENTS: A GUIDE TO THE DESIGN OF TRAINING PROGRAMS IN EDUCATION AND OTHER FIELDS. CRUSK, Institute for Social Research. Ann Arbor: University of Michigan, 1973.

Mandels, G. E., and Flanders, J. P. "Teachers' Expectations and Pupil Performance." AMERICAN EDUCATIONAL RESEARCH JOURNAL, 1973, 10 (3), 203-211.

Miles, M. B. (ed.) INNOVATION IN EDUCATION. New York: Teachers College Press, 1964.

Miles, M. B. "The Development of Innovative Climates in Educational Organizations." TIJDSCHRIFT VOOR AGOLOGIE (Journal for the Study of Planned Change), 1972, 1, 16-33.

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